

INVESTIGATION OF  
GROUND-WATER CONDITIONS  
ON UNIVERSAL OIL PRODUCTS INC.'S SITE  
EAST RUTHERFORD, NEW JERSEY

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Geraghty & Miller, Inc.

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INTRODUCTION

Geraghty & Miller, Inc. was retained by Lum, Biunno and Tompkins (now Tompkins, McGuire and Wachenfeld) in May 1983 to review available information pertaining to ground-water conditions at UOP Inc.'s (formerly Universal Oil Products Company) East Rutherford, New Jersey, plant site (Figure 1) and to develop a program of investigation which would provide the information necessary for a preliminary assessment of site conditions.

The subsequent program of investigation proposed by Geraghty & Miller, Inc. was incorporated into a July 1983 Administrative Consent Order (ACO) signed by UOP Inc. and the New Jersey Department of Environmental Protection (NJDEP). In accordance with the requirements of the ACO, a first phase of work was undertaken in August 1983 to develop a current topographic base map of the site and identify all areas where contamination from past plant activities may have entered the overburden. This work, performed in preparation for a second-phase drilling and testing program, was completed in October 1983.

The actual field investigation (onsite drilling, testing and sampling) was initiated in November 1983 to identify ground-water flow patterns across the site and to characterize the chemical quality of the soil and

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FIGURE 1 - LOCATION OF STUDY AREA, UOP Inc., East Rutherford,  
New Jersey.

ground water at selected locations. The findings of the field investigation are presented in this report and serve as the basis for evaluating the nature and extent of contamination in the study area.

SITE HISTORY

In 1960, UOP Inc. purchased the Trubeck Laboratories, a New Jersey corporation. The Trubeck Laboratories developed the site in 1932 with the construction of an aroma chemicals laboratory.

In 1955 the property was used by UOP's predecessor in interest for the recovery of solvents and waste chemicals. A waste treatment plant was constructed onsite in 1956 and further expanded by the constructing of two wastewater holding lagoons in 1959. Available information suggests that the principal contaminants in the waste stream sent to the lagoons were insoluble calcium and magnesium salts, oxides and hydroxides of metals such as iron, manganese and chromium, other inorganics and some insoluble organics.

UOP Inc. acquired the Trubeck Laboratories and the existing plant in 1960 and performed subsequent process modifications to adapt the facility for the intended use of developing new chemicals. Included in these modifications was the abandonment of both the onsite treatment system and the use of the two lagoons. This was made possible by the 1971 connection of the plant to a municipal sewer system. In 1979, UOP Inc. decided to terminate operations and dismantle the plant. Demolition work was accomplished during the summer of 1980.

According to records available to and provided by UOP Inc., the primary chemical products produced at the plant between 1960 and 1979 (operating life under UOP Inc. ownership) were benzyl alcohol and amyl salicylate.

Currently the only remnants of the plant are the building foundations, concrete tank pads, storm and wastewater sewers, and partial property fencing.

### HYDROGEOLOGY

The preliminary hydrogeologic assessment provided in this report for UOP Inc.'s East Rutherford, New Jersey, plant site is based on information obtained from soil borings, monitoring wells, and surface-water staff gauges drilled or installed between November 1983 and March 1984. The locations of all monitoring wells, soil borings, surface-water staff gauges, and lines of geologic cross section are shown in Plate 1. A detailed discussion of the field investigation including monitoring well construction information, lithologic logs, soil sampling, inspection procedures and the installation of staff gauges and automatic water-level recorders is provided in Appendix A.

### Geology

A regional study (Carswell, 1976) indicates that the UOP Inc. site is located in the Hackensack River Basin. The former plant site is underlain by unconsolidated deposits varying in thickness from 50 to 200 feet. These deposits are reported to consist primarily of stratified sands and clays with a basal glacial till of variable thickness. The bedrock unit immediately underlying the unconsolidated deposits is the Brunswick Formation which is composed of shale, siltstone, and occasionally some sandstone. Where highly fractured, the Brunswick Formation is a prolific source of ground water and the unit is considered to be the principal aquifer throughout much of northern New Jersey.

Site-specific information on the lithology and thickness of the over-

burden is presented in Figures 2, 3, and 4. Figure 2 provides an overview of geologic conditions onsite and shows that the top of the competent bedrock lies at depths of 125 to 135 feet below land surface between Well Clusters 3 and 7. There is no indication of irregularities in the surface of the bedrock which, at least in this area, exhibits little or no weathering. The first 60 to 70 feet of unconsolidated deposits above the bedrock surface vary in composition from the fine-grained sand found around Well Cluster 3 to alternating beds of silt, fine-grained sand, and clay observed around Well Cluster 7. The presence of alternating beds of distinct, fine-grained sediments is characteristic of fluvial environments and suggests that geologic conditions are likely to be much more complex toward the east or center of the river basin. No glacial till was encountered above the bedrock at either deep well location, indicating that local geologic conditions may differ significantly from the general evaluations provided in regional studies.

The upper 55 to 70 feet of unconsolidated deposits between Well Clusters 3 and 7 consist predominantly of clay with small amounts of silt and sand. Because these deposits are associated with historical river sedimentation in the basin, it is reasonable to conclude that the lithology shown on Figure 3 is representative of conditions on the entire site.

A more detailed characterization of lithologic conditions in the uppermost 20 feet of overburden is provided in Figures 3 and 4. It is important to identify the general nature of surficial geologic conditions because they are likely to have a significant impact on the movement of any

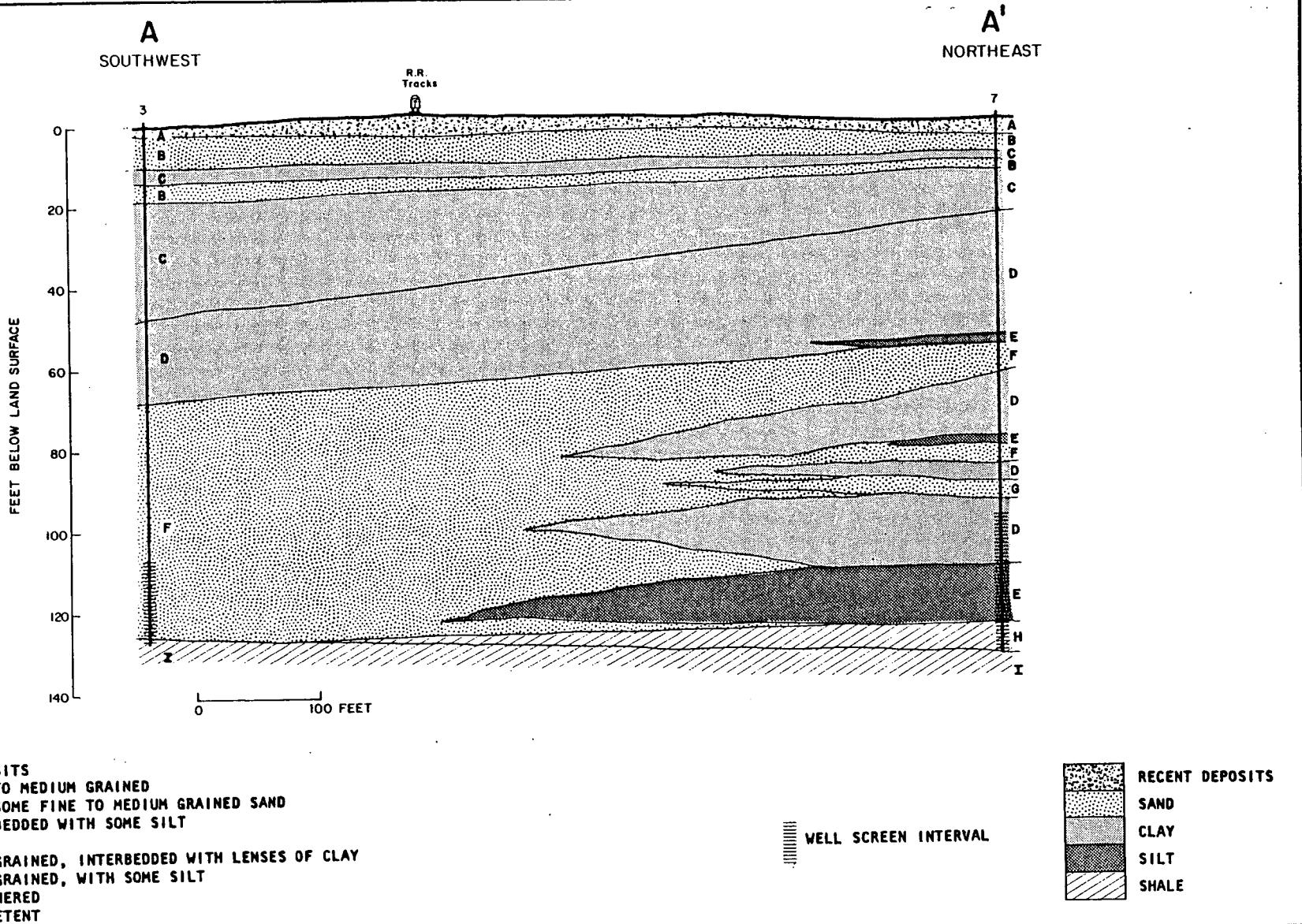
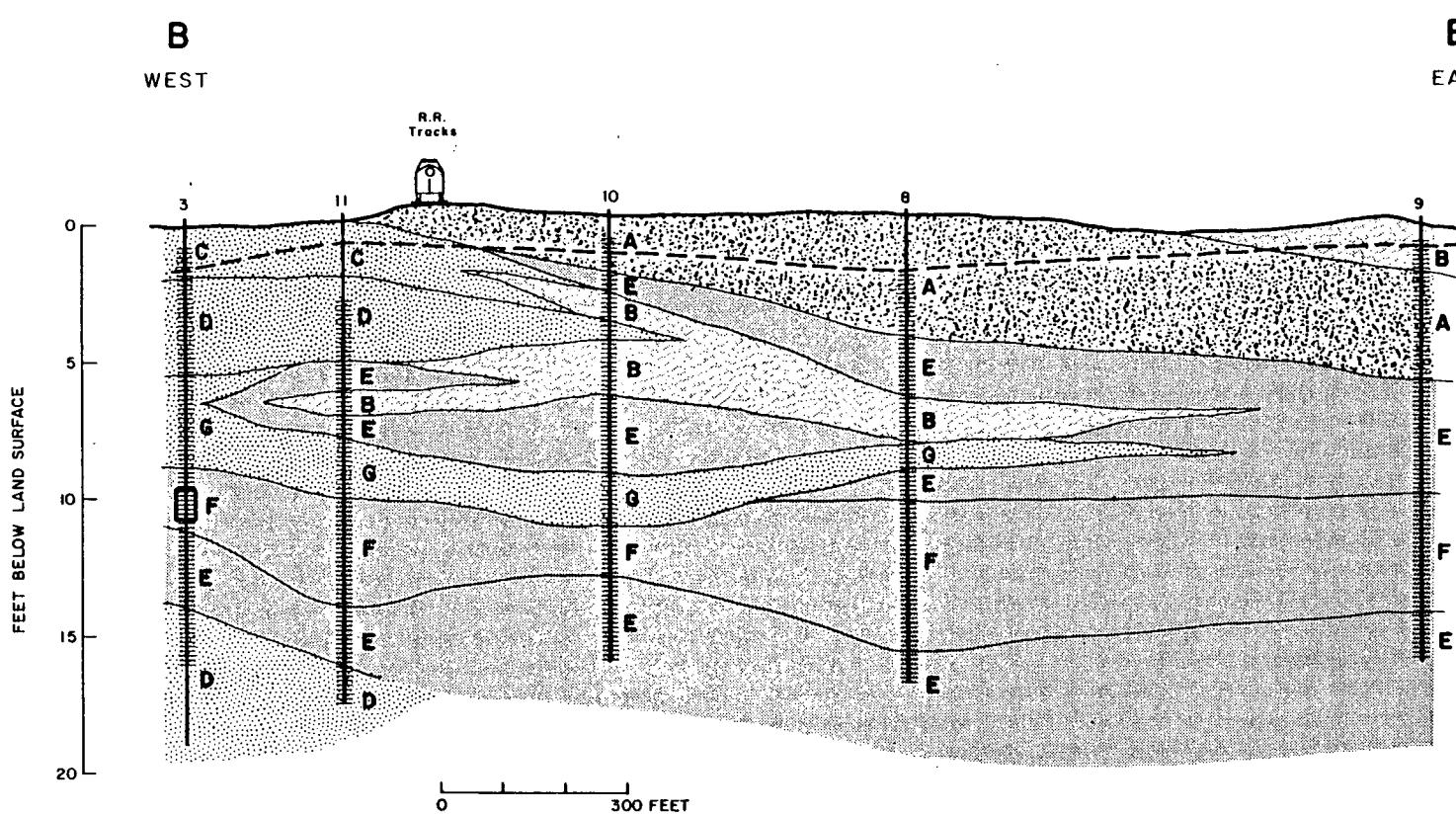


FIGURE 2 - GEOLOGIC CROSS SECTION A-A'  
UOP Inc., East Rutherford, New Jersey

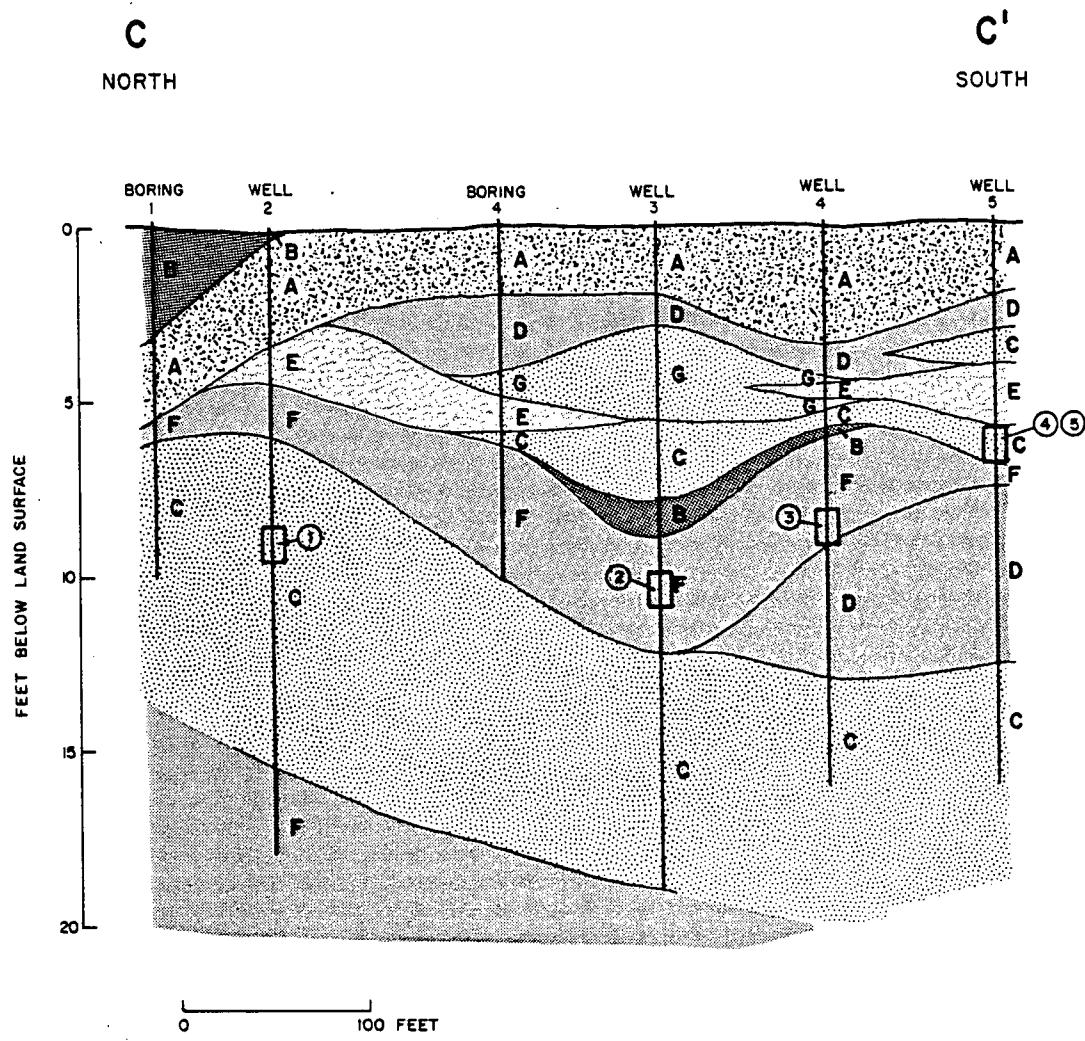


- A - RECENT DEPOSITS
- B - MEADOW MAT / PEAT
- C - SAND, FINE TO MEDIUM GRAINED WITH SOME GRAVEL
- D - SAND, FINE TO MEDIUM GRAINED
- E - CLAY, GRAY, SILTY
- F - CLAY, RED, SILTY
- G - SAND, FINE GRAINED WITH SOME SILT

LOCATION OF UNDISTURBED  
SOIL SAMPLE ( $P=3.5 \times 10^{-6}$  CM/SEC)  
 WELL SCREEN INTERVAL  
 WATER TABLE

**RECENT DEPOSITS**  
**MEADOW MAT / PEAT DEPOSITS**  
**SAND**  
**CLAY**

FIGURE 3 - GEOLOGIC CROSS SECTION B-B' THROUGH UPPERMOST DEPOSITS  
UOP Inc., East Rutherford, New Jersey



A - RECENT DEPOSITS  
 B - SILT  
 C - SAND, FINE TO MEDIUM GRAINED,  
     WITH SOME SILT  
 D - CLAY, REDISH-BROWN, SILTY  
 E - MEADOW MAT  
 F - CLAY, GRAY WITH A TRACE OF  
     FINE SAND AND SILT  
 G - SAND, FINE TO MEDIUM GRAINED,  
     WITH SOME GRAVEL

LOCATION OF UNDISTURBED  
 SOIL SAMPLE  
 ① SAND ( $8.6 \times 10^{-3}$ )  
 ② CLAY W/SOME SAND ( $3.5 \times 10^{-6}$ )  
 ③ CLAY ( $1.2 \times 10^{-7}$ )  
 ④ SILT ( $3.4 \times 10^{-6}$ )  
 ⑤ SAND ( $2.1 \times 10^{-6}$ )

RECENT DEPOSITS
SILT
SAND
CLAY
MEADOW MAT

FIGURE 4 - GEOLOGIC CROSS SECTION C-C' THROUGH UPPERMOST DEPOSITS  
 UOP Inc., East Rutherford, New Jersey

contaminants entering the subsurface, especially in view of the shallow water table at the site. Both Figures 3 and 4 show considerable amounts of low permeability clay, silt, and fine sand in the upper 20 feet. The actual permeabilities are  $8.6 \times 10^{-3}$  cm/sec for fine-grained sand to  $1.2 \times 10^{-7}$  cm/sec for silty clay. These values are based on the results of laboratory tests performed on selected undisturbed soil cores and suggest that the rates of ground-water movement through these surficial deposits are likely to be relatively low. More detailed information on the procedures and results of the permeability testing work are provided in Appendix B.

In addition to the near surface deposits of fine sand, silt, and clay, Figures 3 and 4 also show the presence of peat or meadow mat deposits. The peat in these deposits is relatively decomposed and does not contain significant quantities of fibrous material. Moreover, thin seams of silty clay were frequently observed within the peat deposits. These factors, together with consolidation at effective stresses presumed to be at or greater than  $0.25 \text{ t}/\text{ft}^2$ , suggest permeabilities for the peat of between  $1 \times 10^{-6}$  cm/sec and  $1 \times 10^{-7}$  cm/sec.

This finding supports the contention made in a previous site report (McTigue, 1983) that the peat deposits, where present, serve to significantly retard ground-water flow. However, based on the results of the November 1983 to March 1984 field investigation it is apparent that the peat deposits are not continuous throughout the entire site and therefore cannot be presumed to act as a barrier which would effectively prevent vertical contaminant migration or mixing in the shallow (water-table) system. Spe-

cifically, no peat deposits were encountered at the locations of Boring 1, Well Clusters 3 and 7, and Monitoring Well 9. However, a competent clay unit with an approximate thickness of 20 feet and a laboratory determined permeability of  $1 \times 10^{-7}$  cm/sec does underlie the surficial sand and peat deposits and there is every indication that this clay unit confines the basal sand deposits.

#### Occurrence and Movement of Ground Water

Ground water occurs at depths of between one and five feet below land surface across the study area and is under water-table conditions in the upper 20 to 30 feet of the overburden. To map the water table, 12 synoptic rounds of water-level data were collected from all intermediate wells (screened across or very near the water table) and at five staff gauge locations in adjoining surface waters. Three of these rounds are plotted and contoured on Plates 2, 3, and 4 to show monthly variations in water-table and flow patterns. Water-level information collected during this investigation is provided in Table 1.

The water-table contours shown on Plate 2 indicate that ground water is discharging to the surface-water bodies around the site, as would normally be expected. The influence of these surface waters (discharge areas), the local topography, and variations in soil permeability account for the observed flow of ground water away from the area of the old lagoons and the water-table high occurring midway between Wells 7 and 10. In the first instance, flow is radially away from the center of the area once occupied by the plant's two lagoons. Most of the water leaving this area discharges to

TABLE 1. SUMMARY OF WATER LEVEL DATA FOR MONITORING WELLS AT UOP INC.'S PLANT IN EAST RUTHERFORD, NEW JERSEY

WELL NUMBER	NOVEMBER 30, 1983			DECEMBER 6, 1983			DECEMBER 14, 1983			DECEMBER 21, 1983		
	ELEVATION of the TOP of CASING*	DEPTH to WATER (feet)	GROUNDWATER ELEVATION mean sea level)	DEPTH to WATER (feet)	GROUNDWATER ELEVATION mean sea level)	DEPTH to WATER (feet)	GROUNDWATER ELEVATION mean sea level)	DEPTH to WATER (feet)	GROUNDWATER ELEVATION mean sea level)	DEPTH to WATER (feet)	GROUNDWATER ELEVATION mean sea level)	
	(feet above mean sea level)		NA		NA		NA		NA		NA	
1		3.40	NA	2.66	NA	3.38	NA	3.37	NA			
2S	6.71	4.30	2.41	4.65	2.06	3.45	3.26	DRY	DRY			
2I	7.22	5.34	1.88	4.67	2.55	4.68	2.54	5.50	1.72			
3S	6.61	4.40	2.21	4.87	1.74	4.13	2.48	7.78	(1.17)			
3I	6.75	4.59	2.16	4.23	2.52	4.20	2.55	4.90	1.85			
3D	6.49	3.81	2.68	3.22	3.27	2.99	3.50	2.76	3.73			
4	7.43	5.14	2.29	4.88	2.55	4.75	2.68	5.45	1.98			
5	6.79	3.07	3.72	2.66	4.13	2.89	3.90	3.63	3.16			
6	7.43	4.41	3.02	3.00	4.43	2.86	4.57	4.81	2.62			
7S	7.41	6.29	1.12	6.53	0.88	4.99	2.42	DRY	DRY			
7I	8.61	4.22	4.39	3.57	5.04	3.79	4.82	4.77	3.84			
7D	7.86	4.78	3.08	4.29	3.57	3.99	3.87	3.78	4.08			
8	8.41	5.00	3.41	4.41	4.00	4.87	3.54	4.52	3.89			
9	5.02	1.14	3.88	0.77	4.25	0.93	4.09	1.26	3.76			
10	7.68	4.22	3.46	3.41	4.27	4.32	3.36	4.58	3.10			
11	6.49	3.81	2.68	3.09	3.40	3.39	3.10	4.00	2.49			
MW 3	5.79	3.90	1.89	1.72	4.07	3.28	2.51	3.77	2.02			
MW17	5.85	2.07	3.78	2.85	3.00	1.64	4.21	2.39	3.46			
<hr/>												
STAFF GAUGE NUMBER	SURFACE WATER (feet above mean sea level)			SURFACE WATER (feet above mean sea level)			SURFACE WATER (feet above mean sea level)			SURFACE WATER (feet above mean sea level)		
	STAFF ELEVATION (feet above mean sea level)	GAUGE WATER (feet) LEVEL	ELEVATION mean sea level)	STAFF ELEVATION (feet above mean sea level)	GAUGE WATER (feet) LEVEL	ELEVATION mean sea level)	STAFF ELEVATION (feet above mean sea level)	GAUGE WATER (feet) LEVEL	ELEVATION mean sea level)	STAFF ELEVATION (feet above mean sea level)	WATER (feet above mean sea level)	
	1	0.85	1.54	2.39	3.46	4.31	1.10	1.95	2.76	3.61		
2	1.21	1.24	2.45	3.14	4.35	0.79	2.00	2.50	3.71			
3	-1.29	1.26	-0.03	5.40	4.11	3.02	1.73	5.02	3.73			
4	-2.76	0.28	-2.48	4.70	1.94	2.40	-0.36	3.28	0.52			
5	0.29	0.60	0.89	3.58	3.87	1.30	1.59	3.10	3.39			

TABLE 1. (Continued)

WELL NUMBER	DECEMBER 28, 1983			JANUARY 4, 1984			JANUARY 12, 1984			JANUARY 18, 1984		
	ELEVATION of the TOP of CASING*	DEPTH to WATER (feet)	GROUNDWATER ELEVATION (feet above mean sea level)									
	(feet above mean sea level)		NA		NA	*	NA		NA		*	NA
1		----	NA		----	NA		*	NA		*	NA
2S	6.71	4.77	1.94	4.40	2.31	4.07	2.64	3.91	2.80			
2I	7.22	5.57	1.65	5.31	1.91	5.87	1.35	5.38	1.84			
3S	6.61	4.87	1.74	4.41	2.20	4.41	2.20	4.34	2.27			
3I	6.75	5.79	0.96	4.86	1.89	5.48	1.27	5.38	1.37			
3D	6.49	2.39	4.10	1.99	4.50	1.91	4.58	1.84	4.65			
4	7.43	5.56	1.87	5.37	2.06	5.52	1.91	5.49	1.94			
5	6.79	4.17	2.62	3.84	2.95	3.55	3.24	3.83	2.96			
6	7.43	4.08	3.35	4.03	3.40	4.53	2.90	4.32	3.11			
7S	7.41	6.09	1.32	5.13	2.28	6.41	1.00	5.54	1.87			
7I	8.61	4.96	3.65	4.84	3.77	5.09	3.52	4.67	3.94			
7D	7.86	2.15	5.71	1.96	5.90	2.44	5.42	2.53	5.33			
8	8.41	5.15	3.26	4.53	3.88	5.14	3.27	4.67	3.74			
9	5.02	1.19	3.83	1.13	3.89	1.60	3.42	1.41	3.61			
10	7.68	4.76	2.92	4.97	2.71	5.57	2.11	5.10	2.58			
11	6.49	4.34	2.15	3.13	3.36	4.45	2.04	4.09	2.40			
MW 3	5.79	4.16	1.63	3.36	2.43	4.32	1.47	3.66	2.13			
MW17	5.85		NA	2.43	3.42	2.71	3.14	2.80	3.05			

STAFF GAUGE NUMBER	STAFF ELEVATION (feet above mean sea level)	GAUGE WATER LEVEL (feet)	SURFACE WATER ELEVATION (feet above mean sea level)	STAFF ELEVATION (feet above mean sea level)	GAUGE WATER LEVEL (feet)	SURFACE WATER ELEVATION (feet above mean sea level)	STAFF ELEVATION (feet above mean sea level)	GAUGE WATER LEVEL (feet)	SURFACE WATER ELEVATION (feet above mean sea level)	GAUGE WATER LEVEL (feet)	SURFACE WATER ELEVATION (feet above mean sea level)
1	0.85	1.98	2.83	2.66	3.51	0.50	1.35	0.42	1.27		
2	1.21	1.66	2.87	2.42	3.63	0.62	1.83	1.05	2.26		
3	-1.29	4.00	2.71	4.68	3.39	2.42	1.13	2.14	0.85		
4	-2.76	3.28	0.52	3.96	1.20	1.50	-1.26	2.36	-0.40		
5	0.29	2.28	2.57	2.88	3.17	0.62	0.91	1.55	1.84		

\* - indicates ice in well

TABLE 1. (Continued)

WELL NUMBER	JANUARY 20, 1984				JANUARY 26, 1984				FEBRUARY 8, 1984				FEBRUARY 24, 1984			
	ELEVATION of the TOP of CASING*	DEPTH to WATER (feet)	GROUNDWATER ELEVATION (feet above mean sea level)	WATER mean sea level)	DEPTH to WATER (feet)	GROUNDWATER ELEVATION (feet above mean sea level)	WATER mean sea level)	DEPTH to WATER (feet)	GROUNDWATER ELEVATION (feet above mean sea level)	WATER mean sea level)	DEPTH to WATER (feet)	GROUNDWATER ELEVATION (feet above mean sea level)	WATER mean sea level)	DEPTH to WATER (feet)	GROUNDWATER ELEVATION (feet above mean sea level)	WATER mean sea level)
	(feet above mean sea level)		NA	*	NA	3.54	NA	3.40	NA		DEPTH to WATER (feet)	GROUNDWATER ELEVATION (feet above mean sea level)	WATER mean sea level)	DEPTH to WATER (feet)	GROUNDWATER ELEVATION (feet above mean sea level)	WATER mean sea level)
1																
2S	6.71	3.82	2.89		3.71	3.00	3.26	3.45			2.90	3.81				
2I	7.22	5.21	2.01		5.45	1.77	5.34	1.88			4.37	2.85				
3S	6.61	4.26	2.35		4.15	2.46	4.00	2.61			3.72	2.89				
3I	6.75	4.95	1.80		4.75	2.00	4.60	2.15			4.25	2.50				
3D	6.49	1.84	4.65		1.81	4.68	1.66	4.83			1.32	5.17				
4	7.43	1.43	6.00		5.20	2.23	5.15	2.28			4.84	2.59				
5	6.79	3.71	3.08		2.73	4.06	3.25	3.54			2.78	4.01				
6	7.43	4.34	3.09		4.02	3.41	3.75	3.68			3.03	4.40				
7S	7.41	5.27	2.14		4.88	2.53	4.31	3.10			3.77	3.64				
7I	8.61	4.64	3.97		4.66	3.95	4.60	4.01			3.65	4.96				
7D	7.86	1.47	6.39		2.39	5.47	2.33	5.53			1.37	6.49				
8	8.41	5.03	3.38		5.03	3.38	5.05	3.36			4.83	3.58				
9	5.02	1.34	3.68		1.47	3.55	1.59	3.43			0.98	4.04				
10	7.68	4.69	2.99		4.21	3.47	4.66	3.02			3.70	3.98				
11	6.49	3.92	2.57		4.09	2.40	3.91	2.58			3.48	3.01				
MW 3	5.79	3.51	2.28		4.11	1.68	4.07	1.72			3.40	2.39				
MW17	5.85	2.57	3.28		2.52	3.33	2.42	3.43			1.93	3.92				
<hr/>																
STAFF GAUGE NUMBER	ELEVATION OF 0.0 FOOT MARK ON STAFF GAUGE (feet above mean sea level)	STAFF GAUGE WATER LEVEL (feet mean sea level)	SURFACE WATER ELEVATION (feet above mean sea level)	STAFF GAUGE WATER LEVEL (feet mean sea level)	SURFACE WATER ELEVATION (feet above mean sea level)	STAFF GAUGE WATER LEVEL (feet mean sea level)	SURFACE WATER ELEVATION (feet above mean sea level)	STAFF GAUGE WATER LEVEL (feet mean sea level)	SURFACE WATER ELEVATION (feet above mean sea level)	STAFF GAUGE WATER LEVEL (feet mean sea level)	SURFACE WATER ELEVATION (feet above mean sea level)	STAFF GAUGE WATER LEVEL (feet mean sea level)	SURFACE WATER ELEVATION (feet above mean sea level)	STAFF GAUGE WATER LEVEL (feet mean sea level)	SURFACE WATER ELEVATION (feet above mean sea level)	
1	0.85	2.90	3.75	0.48	1.33	0.48	1.33	0.80	1.65							
2	1.21	2.62	3.83	0.70	1.91	0.62	1.83	0.72	1.93							
3	-1.29	4.84	3.55	1.40	0.11	1.46	0.17	3.44	2.15							
4	-2.76	4.33	1.57	0.48	-2.28	0.80	-1.96	2.68	-0.08							
5	0.29	3.24	3.53	0.84	1.13	0.00	0.29	1.62	1.91							

\* - indicates ice in well

surface waters which essentially bound the lagoons on three sides.

Although the data suggest the presence of a recharge mound in the water table beneath the old lagoons, the configuration of the contours could also be attributable to normal ground-water flow toward the adjoining surface waters. Only a small portion of the total flow is directed toward a topographically low area to the southwest of Well Cluster 3 where surface flooding is commonly observed. The elevated ground-water levels in the area between Wells 7 and 10, on the other hand, are considerably more extensive with the 4-foot contour line identifying the outer limits of a localized recharge zone for the water-table system. Flow in this area is directed away from the 4-foot contour line to the north, northwest, south, and southwest. The small drainage channel which forms a part of the site's northern property line captures some of the ground water flowing to the north; however it does not appear to have a substantial impact on the overall pattern of flow.

The existing data base is not sufficient to delineate the configuration of the water table over the area which starts about 350 feet southeast of Well Cluster 7 and extends to and beyond Murray Hill Parkway. However, it is reasonable to expect a continued increase in the elevation of the water table over this area. This is because of the highly permeable nature of the construction rubble (brick) found here, which minimizes runoff and maximizes the rate of infiltration of precipitation, and the increase in land surface elevations toward the parkway.

Interestingly, the overall pattern of flow shown in Plate 2 includes a

component of flow to the northwest (toward Route 17), which runs contrary to normal expectations. However, close examination of recent aerial photos indicates the presence of a drainage swale on the west side of Route 17 which could represent a local discharge boundary for shallow ground water.

The water-table flow patterns shown on Plates 3 and 4 were developed from information collected on January 26, 1984 and February 24, 1984, respectively; however both depict the same general flow pattern illustrated in Plate 2 which was based on water-level data collected on December 21, 1983. The configuration of individual contours varies from map to map, due mostly to a general increase in the elevation of the water table over the two-month period spanned by the maps. This good agreement is taken as an indication that all of the wells are open and responding to natural variations in the elevation of the water table and more importantly that the flow shown on the maps reasonably represents conditions at the site over at least the winter season. Moreover, this is supported by the remaining water-level data in Table 1.

Automatic water-level recorders were installed on Monitoring Wells 3I, 7I, 8, and 10 to develop a daily record of changes in the elevation of the water table during the course of the field investigation. Unfortunately, vandalism and periods of extreme cold during late December 1983 and January 1984 frequently resulted in interrupted and incomplete records; however the records that were developed (1) confirm that the water table has risen during the study period (November 1983 to March 1984) in response to higher than average precipitation levels, and (2) that the water table in the vi-

cinity of Wells 7I, 8, and 10 undergoes daily fluctuations in elevation in apparent response to changes in the level of nearby surface waters. This effect is most pronounced in Monitoring Well 10, which is closest to a surface-water body and least pronounced in Monitoring Well 7I which is the furthest of the three wells from any surface waters draining the site. No such fluctuations were observed on any of the records collected from Monitoring Well 3I which is located along the western property line of the plant approximately 400 feet from the nearest surface-water body.

Two three-well clusters at Sites 3 and 7 were installed to compare water quality and hydraulic head information at different depths within the overburden in order to evaluate the potential for the vertical migration of contaminants. Water-level or hydraulic head information obtained from the two groups of cluster wells is provided in Table 1.

All of the 12 measurements made in the cluster wells at Site 3 identify vertical hydraulic gradients in the overburden that are directed upward (i.e., from the deep or basal overburden well to the intermediate/water table well) or away from the bedrock. Upward hydraulic gradients were also measured between the deep and intermediate wells in Cluster 7, on nine of twelve occasions.

In general, the site appears to be located in what would typically be considered a regional discharge zone for ground water. This is supported by the head distributions for the wells in Cluster 3 and, for the most part, by the head values obtained for the wells in Cluster 7.

Although ground water near the surface (within the upper 20 to 30 feet of the overburden) occurs under water-table conditions, it is likely that ground water in the basal sand and silt deposits found at depths of between 60 and 130 feet below land surface is under semi-confined conditions. This is based on an evaluation of the lithology of two clayey units which, as illustrated in Figure 2, extend from a depth of approximately 20 feet below land surface to an approximate depth of 60 feet below land surface. Available information suggests that the silt, fine sand, and clay comprising these low-permeability units are continuous throughout the site. The likelihood that the basal overburden is under semi-confined conditions is further supported by the vertical distribution of hydraulic head values at each of the two cluster well locations where head differences on the order of one to three feet exist between the shallow and deep overburden wells.

The specific impacts of similar low-permeability deposits, including peat (meadow mat) on flow conditions in the upper 20 to 30 feet of the overburden cannot be accurately assessed because of the extreme heterogeneity of the deposits and the distribution of available data points. As a result, the contour maps and flow lines on Plates 2, 3, and 4 represent a smoothing or averaging of actual conditions. These contours and flow lines could be refined by more detailed investigations, but the general flow scheme is not expected to be different from those depicted.

CHEMICAL QUALITY OF THE SOILS, SEDIMENTS,  
SURFACE AND GROUND WATERS

Soil samples, creek sediment samples, and surface- and ground-water samples were collected between November 17 and 23, 1983, and submitted for chemical analyses to Measurement Sciences Corporation (MSC), a Garden City, New York, based laboratory certified by the State of New Jersey. This work was performed in accordance with previously established and approved protocols which are provided in Appendix C, together with the results of the analytical work as reported by the laboratory. All of the samples were delivered by hand to the laboratory, generally on the day they were collected. A discussion of the various analytical programs and findings is presented below.

Chemical Quality of Surface and Ground Waters

Surface-water samples were collected at the locations of staff gauges 1, 3, 4, 5, and at the sampling stations established near Monitoring Well MW3 and at the confluence of Ackermans Creek and its main tributary. Ground-water samples were collected at the same time from all of the newly installed wells and existing Wells MW3 and MW17. Each sample was analyzed for the following constituents:

Priority pollutant volatile organics  
Priority pollutant base/neutral compounds  
Priority pollutant acid extractable compounds

Benzoic acid	4-chloroaniline
2-methylphenol	Dibenzofuran
4-methylphenol	2-methylnaphthalene
2,4,5-trichlorophenol	2-nitroaniline
Aniline	3-nitroaniline
Benzyl alcohol	4-nitroaniline

Phenol	Lead
Arsenic	Manganese
Chromium	Zinc
Cyanide	Cadmium
pH	Specific Conductance

In addition, blind replicate samples were collected at 20 percent of the sampling locations and submitted to the analyzing laboratory as a check on their ability to reproduce test results. The results of this water quality testing program are provided in Tables 2 and 3.

Based on the information from this round of sampling, it appears that there are four relatively discrete areas where the quality of the ground water has been affected by a variety of organic chemicals to a greater extent than at other locations (Table 2). These areas are identified with the following wells which are listed in order of decreasing total organic contamination (expressed in parts per billion): Well 6 (23,797 ppb), Well MW17 (1,364 ppb), Well 7I (1,101 ppb), and Well 11 (1,099 ppb). The locations of the four areas along with the probable direction(s) of contaminant migration away from each area in the water-table system are shown on Plate 5.

In addition, samples from a number of wells exhibited concentrations for lead and manganese exceeding the standard of 0.05 milligrams/litre (Federal Primary and Secondary Drinking Water Standards). Lead was found above the standard of 0.05 milligrams/litre in samples from Wells 1, 2S, 2I, 3S, 3I, 4, 7S, and MW17 while manganese was found above the aesthetically based limit of 0.05 milligrams/litre in samples from Wells 1, 2I, 3S, 3I, 4, 5, 6, 7S, 10, 11, MW3, and MW17. It is important to note that ele-

TABLE 2. SUMMARY OF GROUND-WATER QUALITY DATA FOR UOP INC.'S PLANT SITE IN EAST RUTHERFORD, NEW JERSEY

VOLATILE ORGANIC COMPOUNDS	SAMPLING DATE:	CHEMICAL CONCENTRATIONS (Reported in micrograms/liter, except where noted)							DETECTION LIMIT
		WELL 1	WELL 2S	WELL 2I	WELL 3S	WELL 3I	WELL 3D	WELL 4	
		=====	=====	=====	=====	=====	=====	=====	
acrolein	11/83	ND	ND	ND	ND	ND	ND	ND	100
acrylonitrile		ND	ND	ND	ND	ND	ND	ND	100
benzene		ND	ND	ND	ND	340	ND	ND	5
carbon tetrachloride		ND	ND	ND	ND	ND	ND	ND	5
chlorobenzene		ND	ND	ND	ND	29	ND	ND	5
1,2-dichloroethane		ND	ND	ND	ND	ND	ND	ND	5
1,1,1-trichloroethane		ND	ND	ND	ND	ND	ND	ND	5
1,1-dichloroethane		ND	ND	ND	ND	ND	ND	ND	5
1,1,2-trichloroethane		ND	ND	ND	ND	ND	ND	ND	5
1,1,2,2-tetrachloroethane		ND	ND	ND	ND	ND	ND	ND	10
chloroethane		ND	ND	ND	ND	ND	ND	ND	10
2-chloroethyl vinyl ether		ND	ND	ND	ND	ND	ND	ND	10
chloroform		ND	ND	ND	ND	ND	ND	ND	5
1,1-dichloroethylene		ND	ND	ND	ND	ND	ND	ND	5
1,2-trans-dichloroethylene		ND	ND	ND	ND	ND	53	48	1.2
1,2-dichloropropane		ND	ND	ND	ND	ND	ND	ND	10
1,3-dichloropropylene		ND	ND	ND	ND	ND	ND	ND	5
ethylbenzene		ND	ND	ND	ND	12	ND	ND	5
methylene chloride		ND	ND	ND	ND	ND	ND	ND	5
methyl chloride		ND	ND	ND	ND	ND	ND	ND	10
methyl bromide		ND	ND	ND	ND	ND	ND	ND	10
bromoform		ND	ND	ND	ND	ND	ND	ND	10
dichlorobromomethane		ND	ND	ND	ND	ND	ND	ND	5
trichlorofluoromethane		ND	ND	ND	ND	ND	ND	ND	10
dichlorodifluoromethane		ND	ND	ND	ND	ND	ND	ND	10
chlorodibromomethane		ND	ND	ND	ND	ND	ND	ND	5
tetrachloroethylene		ND	ND	ND	ND	ND	ND	ND	5
toluene		ND	ND	ND	ND	4.5	ND	ND	2.3
trichloroethylene		ND	ND	ND	ND	ND	15	14	5
vinyld chloride		ND	ND	ND	ND	ND	ND	ND	10
acetone		ND	130	ND	ND	ND	ND	ND	5
2-butanone		ND	ND	ND	ND	ND	ND	ND	5
carbon disulfide		ND	ND	ND	ND	ND	ND	ND	5
2-hexanone		ND	ND	ND	ND	ND	ND	ND	5
4-methyl-2-pentanone		ND	ND	ND	ND	ND	ND	ND	5
stryrene		ND	ND	ND	ND	ND	ND	ND	5
vinyl acetate		ND	ND	ND	ND	ND	ND	ND	5
total xylenes		ND	ND	320	ND	29	ND	ND	3.1

TABLE 2. (Continued/page 2)

TABLE 2. (Continued/page 3)

CHEMICAL CONCENTRATIONS (Reported in micrograms/liter, except where noted)									DETECTION LIMIT
	WELL 1	WELL 2S	WELL 2I	WELL 3S	WELL3I	WELL3D	WELL 4		
<b>ACID EXTRACTABLE COMPOUNDS</b>									
SAMPLING DATE:	11/83	11/83	11/83	11/83	11/83	11/83	**	11/83	
2,4,6-trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	10
p-chloro-m-cresol	ND	ND	ND	ND	ND	ND	ND	ND	10
2-chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	10
2,4-dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	10
2,4-dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	10
2-nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	20
4-nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	50
2,4-dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	50
4,6-dinitro-o-cresol	ND	ND	ND	ND	ND	ND	ND	ND	20
pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	10
phenol	ND	ND	ND	ND	ND	ND	ND	ND	10
<b>NON-PRIORITY POLLUTANT HAZARDOUS COMPOUNDS</b>									
benzoic acid	ND	ND	ND	17	ND	ND	ND	ND	100
2-methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	5
4-methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	5
2,4,5-trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	100
aniline	ND	ND	ND	ND	ND	ND	ND	ND	5
benzyl alcohol	ND	9.6	72	ND	ND	ND	ND	ND	20
4-chloroaniline	ND	ND	ND	ND	ND	ND	ND	65	50
dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	10
2-methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	20
2-nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	100
3-nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	100
4-nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	100
<b>OTHER CONSTITUENTS</b>									
phenol as phenol (mg/L)	0.001	0.001	0.17	0.004	0.05	ND	ND	0.005	
arsenic as As (mg/L)	0.002	0.009	ND	0.010	0.006	ND	ND	ND	0.002
chromium as Cr (mg/L)	0.010	0.03	0.005	0.05	0.005	0.007	ND	ND	0.005
cyanide as CN (mg/L)	ND	0.02	ND	0.02	ND	ND	ND	ND	0.02
lead as Pb (mg/L)	0.12	0.058	0.076	0.11	0.090	0.006	0.010	0.28	
manganese as Mn (mg/L)	18.0	0.04	0.50	5.0	3.2	0.02	0.03	1.4	
zinc as Zn (mg/L)	0.02	0.03	0.02	0.15	ND	ND	ND	ND	0.02
cadmium as Cd (mg/L)	0.009	0.002	0.002	0.002	0.005	ND	ND	ND	0.001
pH	5.9	7.6	6.7	6.1	6.2	5.8		6.5	
specific cond. (umhos/cm)	7500	2800	2010	1450	2500	450		1200	

TABLE 2. (continued/page 4)

VOLATILE ORGANIC COMPOUNDS	SAMPLING DATE:	CHEMICAL CONCENTRATIONS (Reported in micrograms/liter, except where noted)								DETECTION LIMIT
		WELL 5	WELL 6	WELL 7S	WELL 7I	WELL 7D	WELL 8	WELL 9		
		=====	=====	=====	=====	=====	=====	=====	=====	
acrolein	11/83	ND	ND	ND	ND	ND	ND	ND	ND	100
acrylonitrile		ND	ND	ND	ND	ND	ND	ND	ND	100
benzene		ND	18000	160	640	ND	ND	ND	ND	5
carbon tetrachloride		ND	ND	ND	ND	ND	ND	ND	ND	5
chlorobenzene		ND	18	ND	110	ND	ND	ND	ND	5
1,2-dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,1-trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,2-trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	10
1,1,2,2-tetrachloroethane		ND	3800	ND	42	ND	ND	ND	ND	10
chloroethane		ND	ND	ND	ND	ND	ND	ND	ND	10
2-chloroethyl vinyl ether		ND	ND	ND	ND	ND	ND	ND	ND	5
chloroform		ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-dichloroethylene		ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-trans-dichloroethylene		ND	820	ND	ND	ND	ND	ND	ND	10
1,2-dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	5
1,3-dichloropropylene		ND	ND	ND	ND	ND	ND	ND	ND	5
ethylbenzene		ND	11	ND	15	ND	ND	ND	ND	5
methylene chloride		ND	ND	ND	ND	ND	ND	ND	ND	5
methyl chloride		ND	ND	ND	ND	ND	ND	ND	ND	10
methyl bromide		ND	ND	ND	ND	ND	ND	ND	ND	10
bromoform		ND	ND	ND	ND	ND	ND	ND	ND	10
dichlorobromomethane		ND	ND	ND	ND	ND	ND	ND	ND	5
trichlorofluoromethane		ND	ND	ND	ND	ND	ND	ND	ND	10
dichlorodifluoromethane		ND	ND	ND	ND	ND	ND	ND	ND	10
chlorodibromomethane		ND	ND	ND	ND	ND	ND	ND	ND	5
tetrachloroethylene		ND	ND	ND	ND	ND	ND	ND	ND	5
toluene		ND	11	26	90	3.8	ND	ND	ND	5
trichloroethylene		ND	1000	ND	ND	ND	ND	ND	ND	10
vinyl chloride		ND	ND	ND	ND	ND	ND	ND	ND	5
acetone		ND	ND	84	ND	ND	ND	ND	ND	5
2-butanone		ND	ND	ND	ND	ND	ND	ND	ND	5
carbon disulfide		ND	ND	ND	ND	ND	ND	ND	ND	5
2-hexanone		ND	ND	ND	ND	ND	ND	ND	ND	5
4-methyl-2-pentanone		ND	ND	ND	ND	ND	ND	ND	ND	5
stryrene		ND	ND	ND	ND	ND	ND	ND	ND	5
vinyl acetate		ND	ND	ND	ND	ND	ND	ND	ND	5
total xylenes		ND	26	ND	70	ND	ND	ND	ND	5

TABLE 2. (Continued/page 5)

TABLE 2. (Continued/page 6)

ACID EXTRACTABLE COMPOUNDS	SAMPLING DATE:	CHEMICAL CONCENTRATIONS (Reported in micrograms/liter, except where noted)							DETECTION LIMIT
		WELL 5	WELL 6	WELL 7S	WELL 7I	WELL 7D	WELL 8	WELL 9	
		=====	=====	=====	=====	=====	=====	=====	=====
2,4,6-trichlorophenol	11/83	ND	ND	ND	ND	ND	ND	ND	10
p-chloro-m-cresol		ND	ND	ND	ND	ND	ND	ND	10
2-chlorophenol		ND	ND	ND	ND	ND	ND	ND	10
2,4-dichlorophenol		ND	ND	ND	ND	ND	ND	ND	10
2,4-dimethylphenol		ND	ND	ND	ND	ND	ND	ND	10
2-nitrophenol		ND	ND	ND	ND	ND	ND	ND	20
4-nitrophenol		ND	ND	ND	ND	ND	ND	ND	50
2,4-dinitrophenol		ND	ND	ND	ND	ND	ND	ND	50
4,6-dinitro-o-cresol		ND	ND	ND	ND	ND	ND	ND	20
pentachlorophenol		ND	ND	ND	ND	ND	ND	ND	10
phenol		ND	88	ND	8.2	ND	ND	ND	10
<b>NON-PRIORITY POLLUTANT HAZARDOUS COMPOUNDS</b>									
benzoic acid		ND	ND	ND	ND	ND	ND	ND	100
2-methylphenol		ND	ND	ND	28	ND	ND	ND	5
4-methylphenol		ND	ND	ND	24	ND	ND	ND	5
2,4,5-trichlorophenol		ND	ND	ND	ND	ND	ND	ND	100
aniline		ND	ND	ND	ND	ND	ND	ND	5
benzyl alcohol		ND	14	ND	ND	ND	ND	ND	20
4-chloroaniline		ND	ND	ND	ND	ND	ND	ND	50
dibenzofuran		ND	ND	ND	ND	ND	ND	ND	10
2-methylnaphthalene		ND	ND	ND	ND	ND	ND	ND	20
2-nitroaniline		ND	ND	ND	ND	ND	ND	ND	100
3-nitroaniline		ND	ND	ND	ND	ND	ND	ND	100
4-nitroaniline		ND	ND	ND	ND	ND	ND	ND	100
<b>OTHER CONSTITUENTS</b>									
phenols as phenol (mg/L)	0.019		1.2	0.003	0.064	ND	0.002	0.004	0.004
arsenic as As (mg/L)	0.003		0.003	ND	0.021	ND	ND	0.005	ND
chromium as Cr (mg/L)		ND	ND	0.008	0.011	0.005	ND	0.010	0.005
cyanide as CN (mg/L)		ND	ND	0.02	ND	ND	ND	ND	0.02
lead as Pb (mg/L)	0.028		0.013	0.088	0.040	0.006	0.060	0.012	0.011
manganese as Mn (mg/L)	2.9		0.72	0.46	0.67	0.07	0.50	0.47	1.5
zinc as Zn (mg/L)		ND	0.02	0.22	0.04	ND	0.02	0.02	0.04
cadmium as Cd (mg/L)		ND	ND	0.006	ND	ND	0.003	0.003	ND
pH	6.4		6.5	8.4	6.8	5.7	6.5	6.6	
specific cond. (umhos/cm)	1250		950	3750	2500	350	2250	3500	

TABLE 2. (Continued/page 7)

VOLATILE ORGANIC COMPOUNDS	SAMPLING DATE:	CHEMICAL CONCENTRATIONS (Reported in micrograms/liter, except where noted)				DETECTION LIMIT
		WELL 10	WELL 11	WELL MW3	WELL MW17	
		=====	=====	=====	=====	=====
acrolein		ND	ND	ND	ND	100
acrylonitrile		ND	ND	ND	ND	100
benzene	46	600	2.0	92		5
carbon tetrachloride	ND	ND	ND	ND		5
chlorobenzene	10	65	ND	100		5
1,2-dichloroethane	ND	ND	ND	ND		5
1,1,1-trichloroethane	ND	ND	ND	ND		5
1,1-dichloroethane	ND	ND	ND	ND		5
1,1,2-trichloroethane	ND	ND	ND	ND		5
1,1,2,2-tetrachloroethane	ND	ND	ND	ND		10
chloroethane	ND	ND	ND	ND		10
2-chloroethyl vinyl ether	ND	ND	ND	ND		10
chloroform	ND	ND	ND	ND		5
1,1-dichloroethylene	ND	ND	ND	ND		5
1,2-trans-dichloroethylene	41	ND	ND	330		5
1,2-dichloropropane	ND	ND	ND	ND		10
1,3-dichloropropylene	ND	ND	ND	ND		5
ethylbenzene	54	ND	ND	10		5
methylene chloride	ND	ND	ND	ND		5
methyl chloride	ND	ND	ND	ND		10
methyl bromide	ND	ND	ND	ND		10
bromoform	ND	ND	ND	ND		10
dichlorobromomethane	ND	ND	ND	ND		5
trichlorofluoromethane	ND	ND	ND	ND		10
dichlorodifluoromethane	ND	ND	ND	ND		10
chlorodibromomethane	ND	ND	ND	ND		5
tetrachloroethylene	ND	ND	ND	4.2		5
toluene	21	180	ND	160		5
trichloroethylene	1.1	ND	ND	15		5
vinyl chloride	340	ND	ND	120		10
acetone	ND	ND	ND	ND		5
2-butanone	ND	ND	ND	ND		5
carbon disulfide	ND	ND	ND	ND		5
2-hexanone	ND	ND	ND	ND		5
4-methyl-2-pentanone	ND	ND	ND	4.1		5
stryrene	ND	ND	ND	ND		5
vinyl acetate	ND	ND	ND	ND		5
total xylenes	76	ND	320	210		5

TABLE 2. (Continued/page 8)

BASE/NEUTRAL EXTRACTABLE COMPOUNDS	SAMPLING DATE:	CHEMICAL CONCENTRATIONS (Reported in micrograms/liter, except where noted)				DETECTION LIMIT
		WELL 10	WELL 11	WELL MW3	WELL MW17	
		=====	=====	=====	=====	
acenaphthene	11/83	ND	ND	ND	ND	10
benzidine	11/83	ND	ND	ND	ND	40
1,2,4-trichlorobenzene	11/83	ND	ND	ND	29	10
hexachlorobenzene	11/83	ND	ND	ND	ND	10
hexachloroethane	11/83	ND	ND	ND	ND	10
bis(2-chloroethyl)ether	ND	ND	ND	ND		10
2-chloronaphthalene	ND	ND	ND	ND		10
1,2-dichlorobenzene	ND	9.1	ND	150		10
1,3-dichlorobenzene	ND	ND	ND	90		10
1,4-dichlorobenzene	ND	ND	ND	35		10
3,3'-dichlorobenzidine	ND	ND	ND	ND		20
2,4-dinitrotoluene	ND	ND	ND	ND		20
2,6-dinitrotoluene	ND	ND	ND	ND		20
1,2-diphenylhydrazine (as azobenzene)	ND	ND	ND	ND		20
fluoranthene	ND	ND	ND	ND		10
4-chlorophenyl phenyl ether	ND	ND	ND	ND		10
4-bromophenyl phenyl ether	ND	ND	ND	ND		10
bis(2-chloroisopropyl)ether	ND	ND	ND	ND		20
bis(2-chloroethoxy)methane	ND	ND	ND	ND		20
hexachlorobutadiene	ND	ND	ND	ND		10
hexachlorocyclopentadiene	ND	ND	ND	ND		10
isophorone	ND	ND	ND	ND		10
naphthalene	10	ND	ND	7.5		10
nitrobenzene	ND	ND	ND	ND		10
N-nitrosodiphenylamine	ND	ND	ND	ND		10
N-nitrosodi-n-propylamine	ND	ND	ND	ND		10
bis(2-ethylhexyl)phthalate	ND	ND	ND	ND		10
butyl benzyl phthalate	ND	ND	ND	ND		10
di-n-butyl phthalate	ND	ND	10	ND		10
di-n-octyl phthalate	ND	ND	ND	ND		10
diethyl phthalate	ND	ND	ND	ND		10
dimethyl phthalate	ND	ND	ND	ND		10
benzo(a)anthracene	ND	ND	ND	ND		10
benzo(a)pyrene	ND	ND	ND	ND		20
3,4-benzofluoranthene	ND	ND	ND	ND		20
benzo(k)fluoranthene	ND	ND	ND	ND		20
chrysene	ND	ND	ND	ND		20
acenaphthylene	ND	ND	ND	ND		10
anthracene	ND	ND	ND	ND		10
benzo(ghi)perylene	ND	ND	ND	ND		20
fluorene	ND	ND	ND	ND		10
phenanthrene	ND	ND	ND	ND		10
dibenzo(a,h)anthracene	ND	ND	ND	ND		20
indeno(1,2,3-cd)pyrene	ND	ND	ND	ND		20
pyrene	ND	ND	ND	ND		10

TABLE 2. (Continued/page 9)

CHEMICAL CONCENTRATIONS (Reported in micrograms/liter, except where noted)					DETECTION LIMIT
	WELL 10	WELL 11	WELL MW3	WELL MW17	=====
ACID EXTRACTABLE COMPOUNDS	SAMPLING DATE: 11/83	11/83	11/83	11/83	=====
2,4,6-trichlorophenol	ND	ND	ND	ND	10
p-chloro-m-cresol	ND	ND	ND	ND	10
2-chlorophenol	ND	ND	ND	ND	10
2,4-dichlorophenol	ND	ND	ND	ND	10
2,4 -dimethylphenol	ND	ND	ND	ND	10
2-nitrophenol	ND	ND	ND	ND	20
4-nitrophenol	ND	ND	ND	ND	50
2,4-dinitrophenol	ND	ND	ND	ND	50
4,6-dinitro-o-cresol	ND	ND	ND	ND	20
pentachlorophenol	ND	ND	ND	ND	10
phenol	ND	ND	ND	ND	10
NON-PRIORITY POLLUTANT HAZARDOUS COMPOUNDS					
benzoic acid	ND	ND	ND	ND	100
2-methylphenol	ND	15	ND	ND	5
4-methylphenol	ND	230	ND	ND	5
2,4,5-trichlorophenol	ND	ND	ND	ND	100
aniline	ND	ND	ND	ND	5
benzyl alcohol	ND	ND	12	7.1	20
4-chloroaniline	ND	ND	ND	ND	50
dibenzofuran	ND	ND	ND	ND	10
2-methylnaphthalene	ND	ND	ND	ND	20
2-nitroaniline	ND	ND	ND	ND	100
3-nitroaniline	ND	ND	ND	ND	100
4-nitroaniline	ND	ND	ND	ND	100
OTHER CONSTITUENTS					
phenols as phenol (mg/L)	0.031	0.24	0.12	0.53	
arsenic as As (mg/L)	0.007	0.025	ND	0.029	0.002
chromium as Cr (mg/L)	ND	ND	0.019	0.006	0.005
cyanide as CN (mg/L)	0.05	0.24	ND	0.36	0.02
lead as Pb (mg/L)	0.028	0.052	0.044	0.080	
manganese as Mn (mg/L)	4.3	1.5	2.2	27.0	
zinc as Zn (mg/L)	0.03	0.03	0.03	0.02	0.02
cadmium as Cd (mg/L)	ND	0.003	0.003	0.002	0.001
pH	6.5	6.6	5.9	7.1	
specific cond.(umhos/cm)	1100	1850	2000	2500	

\*\* indicates replicate sample

TABLE 3. SUMMARY OF SURFACE WATER QUALITY DATA AT UOP INC.'S PLANT IN EAST RUTHERFORD, NEW JERSEY

VOLATILE ORGANIC COMPOUNDS	SAMPLING DATE:	CHEMICAL CONCENTRATIONS (reported in micrograms / liter, except where noted)						DETECTION LIMIT
		ST-1	ST-2	ST-3	ST-4	ST-5	ST-6	
		=====	=====	=====	=====	=====	=====	
acrolein		ND	ND	ND	ND	ND	ND	100
acrylonitrile		ND	ND	ND	ND	ND	ND	100
benzene		ND	ND	ND	ND	ND	ND	5
carbon tetrachloride		ND	ND	ND	ND	ND	ND	5
chlorobenzene		ND	ND	ND	ND	ND	ND	5
1,2-dichloroethane		ND	ND	ND	ND	ND	ND	5
1,1,1-trichloroethane		ND	ND	ND	ND	ND	ND	5
1,1-dichloroethane		ND	ND	ND	ND	ND	ND	5
1,1,2-trichloroethane		ND	ND	ND	ND	ND	ND	5
1,1,2,2-tetrachloroethane		ND	ND	ND	ND	ND	ND	10
chloroethane		ND	ND	ND	ND	ND	ND	10
2-chloroethyl vinyl ether		ND	ND	ND	ND	ND	ND	10
chloroform		ND	ND	ND	ND	ND	ND	5
1,1-dichloroethylene		ND	ND	ND	ND	ND	ND	5
1,2-trans-dichloroethylene		ND	ND	ND	ND	ND	ND	5
1,2-dichloropropane		ND	ND	ND	ND	ND	ND	10
1,3-dichloropropylene		ND	ND	ND	ND	ND	ND	5
ethylbenzene		ND	ND	ND	ND	ND	ND	5
methylene chloride		ND	ND	ND	ND	ND	470	5
methyl chloride		ND	ND	ND	ND	ND	ND	10
methyl bromide		ND	ND	ND	ND	ND	ND	10
bromoform		ND	ND	ND	ND	ND	ND	10
dichlorobromomethane		ND	ND	ND	ND	ND	ND	5
trichlorofluoromethane		ND	ND	ND	ND	ND	ND	10
dichlorodifluoromethane		ND	ND	ND	ND	ND	ND	10
chlorodibromomethane		ND	ND	ND	ND	ND	ND	5
tetrachloroethylene		ND	ND	ND	ND	ND	ND	5
toluene		ND	ND	ND	ND	ND	ND	5
trichloroethylene		ND	ND	ND	ND	ND	ND	5
vinyl chloride		ND	ND	ND	ND	ND	ND	10
acetone		ND	ND	ND	ND	ND	ND	5
2-butanone		ND	ND	ND	ND	ND	ND	5
carbon disulfide		ND	ND	ND	ND	ND	ND	5
2-hexanone		ND	ND	ND	ND	ND	ND	5
4-methyl-2-pentanone		ND	ND	ND	ND	ND	ND	5
stryrene		ND	ND	ND	ND	ND	ND	5
vinyl acetate		ND	ND	ND	ND	ND	ND	5
total xylenes		ND	ND	ND	ND	ND	ND	5

TABLE 3. (Continued/page 2)

(cont./ pg 2)

CHEMICAL CONCENTRATIONS (reported in micrograms / liter, except where noted)								DETECTION LIMIT
BASE/NEUTRAL COMPOUNDS	SAMPLING DATE:	ST-1	ST-2	ST-3	ST-4	ST-5	ST-6	
		=====	=====	=====	=====	=====	=====	
acenaphthene		ND	ND	ND	ND	ND	ND	10
bénzidine		ND	ND	ND	ND	ND	ND	40
1,2,4-trichlorobenzene		ND	ND	ND	ND	ND	ND	10
hexachlorobenzene		ND	ND	ND	ND	ND	ND	10
hexachloroethane		ND	ND	ND	ND	ND	ND	10
bis(2-chloroethyl)ether		ND	ND	ND	ND	ND	ND	10
2-chloronaphthalene		ND	ND	ND	ND	ND	ND	10
1,2-dichlorobenzene		8.0	ND	ND	ND	ND	ND	10
1,3-dichlorobenzene		ND	ND	ND	ND	ND	ND	10
1,4-dichlorobenzene		ND	ND	ND	ND	ND	ND	10
3,3'-dichlorobenzidine		ND	ND	ND	ND	ND	ND	20
2,4-dinitrotoluene		ND	ND	ND	ND	ND	ND	20
2,6-dinitrotoluene		ND	ND	ND	ND	ND	ND	20
1,2-diphenylhydrazine (as azobenzene)		ND	ND	ND	ND	ND	ND	20
fluoranthene		ND	ND	ND	ND	ND	ND	10
4-chlorophenyl phenyl ether		ND	ND	ND	ND	ND	ND	10
4-bromophenyl phenyl ether		ND	ND	ND	ND	ND	ND	10
bis (2-chloroisopropyl) ether		ND	ND	ND	ND	ND	ND	20
bis (2-chloroethoxy) methane		ND	ND	ND	ND	ND	ND	20
hexachlotobutadine		ND	ND	ND	ND	ND	ND	10
hexachlorocyclopentadiene		ND	ND	ND	ND	ND	ND	10
isophorone		ND	ND	ND	ND	ND	ND	10
naphthalene		ND	DN	ND	ND	ND	ND	10
nitrobenzene		ND	ND	ND	ND	ND	ND	10
N-nitrosodiphenylamine		ND	ND	ND	ND	ND	ND	10
N-nitrosodi-n-propylamine		ND	ND	ND	ND	ND	ND	10
bis (2-ethylhexyl) phthalate		8.0	ND	ND	ND	ND	ND	10
butyl benzyl phthalate		ND	ND	ND	ND	ND	ND	10
di-n-butyl phthalate		ND	ND	ND	ND	ND	ND	10
di-n-octyl phthalate		ND	ND	ND	ND	ND	ND	10
diethyl phthalate		ND	ND	ND	ND	ND	ND	10
dimethyl phthalate		ND	ND	ND	ND	ND	ND	10
benzo(a)anthracene		ND	ND	ND	ND	ND	ND	10
benzo(a)pyrene		ND	ND	ND	ND	ND	ND	20
3,4-benzofluoranthene		ND	ND	ND	ND	ND	ND	20
benzo(k)fluoranthene		ND	ND	ND	ND	ND	ND	20
chrysene		ND	ND	ND	ND	ND	ND	20
acenaphthylene		ND	ND	ND	ND	ND	ND	10
anthracene		ND	ND	ND	ND	ND	ND	10
benzo(ghi) perlylene		ND	ND	ND	ND	ND	ND	20
fluorene		ND	ND	ND	ND	ND	ND	10
phenanthrene		ND	ND	ND	ND	ND	ND	10
dibenzo(a,h)anthracene		ND	ND	ND	ND	ND	ND	20
indeno(1,2,3-cd)pyrene		ND	ND	ND	ND	ND	ND	20
pyrene		ND	ND	ND	ND	ND	ND	10

TABLE 3. (Continued/page 3)

(cont./pg 3)

## CHEMICAL CONCENTRATIONS (Reported in micrograms/liter, except where noted)

ACID EXTRACTABLE COMPOUNDS	SAMPLING DATE:	ST-1 =====	ST-2 =====	ST-3 =====	ST-4 =====	ST-5 =====	ST-6 =====	DETECTION LIMIT =====
2,4,6-trichlorophenol	11/83	ND	ND	ND	ND	ND	ND	10
p-chloro-m-cresol		ND	ND	ND	ND	ND	ND	10
2-chlorophenol		ND	ND	ND	ND	ND	ND	10
2,4-dichlorophenol		ND	ND	ND	ND	ND	ND	10
2,4-dimethylphenol		ND	ND	ND	ND	ND	ND	10
2-nitrophenol		ND	ND	ND	ND	ND	ND	20
4-nitrophenol		ND	ND	ND	ND	ND	ND	50
2,4-dinitrophenol		ND	ND	ND	ND	ND	ND	50
2,6-dinitro-o-cresol		ND	ND	ND	ND	ND	ND	20
pentachlorophenol		ND	ND	ND	ND	ND	ND	10
phenol		ND	ND	ND	ND	ND	ND	10
<hr/>								
NON-PRIORITY POLLUTANT HAZARDOUS COMPOUNDS								
benzoic acid		ND	ND	ND	ND	ND	ND	100
2-methylphenol		ND	ND	ND	ND	ND	ND	5
4-methylphenol		ND	ND	ND	ND	ND	ND	5
2,4,5-trichlorophenol		ND	ND	ND	ND	ND	ND	100
aniline		ND	ND	ND	ND	ND	ND	5
benzyl alcohol		ND	ND	ND	ND	ND	ND	20
4-chloroaniline		ND	ND	ND	ND	ND	ND	50
dibenzofuran		ND	ND	ND	ND	ND	ND	10
2-methylnaphthalene		ND	ND	ND	ND	ND	ND	20
2-nitroaniline		ND	ND	ND	ND	ND	ND	100
3-nitroaniline		ND	ND	ND	ND	ND	ND	100
4-nitroaniline		ND	ND	ND	ND	ND	ND	100
<hr/>								
OTHER CONSTITUENTS								
phenol as phenol (mg/L)	0.025	0.021	0.019	0.016	0.02	0.012	0.013	
arsenic as As (mg/L)	ND	ND	ND	0.002	ND	ND	0.002	0.002
chromium as Cr (mg/L)	ND	0.005	ND	ND	0.012	ND	ND	0.005
cyanide as CN (mg/L)	ND	ND	ND	0.02	ND	ND	ND	0.02
lead as Pb (mg/L)	0.12	0.090	0.096	0.07	0.080	0.09	0.07	
manganese as Mn (mg/L)	0.45	0.037	0.46	0.46	0.34	0.24	0.24	
zinc as Zn (mg/L)	0.07	0.08	0.07	0.07	0.06	0.05	0.05	0.02
cadmium as Cd (mg/L)	0.004	0.008	0.004	0.003	0.002	0.014	0.008	0.001
pH	5.7	6.00	5.9	5.9	6.00	5.9		
specific cond. (umhos/cm)	3750	4000	3800	4000	5000	4750		

\* INDICATES REPLICATE SAMPLE

vated levels of manganese frequently occur naturally in soils and unconsolidated deposits and, by themselves are not necessarily indicative of industrial contamination.

A comparison of the four principal areas of contamination shows that volatile organics constitute the bulk of the contamination at each location. More specifically, benzene accounts for more than 65 percent of the total volatile organic concentrations reported for Wells 6, 7I, and 11, while in the sample from Well MW17, the total reflects a more even distribution among a larger number of chemicals with benzene representing less than 10 percent of the total value. Further comparison indicates that although benzene occurs at several locations tapped by monitoring wells and appears to be the most commonly detected organic contaminant (present in 38 percent of all surface- and ground-water samples), these occurrences are not related by one common body of contaminated ground water. This conclusion is based on the identities and concentrations of the other organic contaminants at the various well locations. Were a large, singular plume of contamination present under the site, one would expect to see the same blend of contaminants appearing in most, if not all, of the wells at concentrations whose differences could be explained by natural attenuation in relation to their location in the flow system. Although this occurs to some extent around each of the four areas of substantial ground-water quality degradation, there is a poor correlation between the blend of contaminants found at locations substantially removed from one another such as the areas around Wells 6 and 11.

There does however, appear to be some pattern of contaminant migration on a smaller scale between nearby wells and even between contaminated areas that are located relatively close together. Well 2I exhibits the same contaminants at almost the exact concentrations as reported for Well MW3 and it is likely that this represents the migration of contaminants toward Well MW3. The benzene detected in Well 3I appears to have originated in the vicinity of Well 11 and the old lagoons could be the source area for the dichlorobenzene detected in Well 11. These observations are made using not only the distribution of contaminant concentrations but also the prevailing ground-water flow patterns identified on Plates 2, 3, and 4.

The extreme complexity of the flow system and the associated movement of contamination is underscored by conditions such as those observed in Well Cluster 3. Essentially no contamination was detected in Well 3S, while Well 3I showed elevated concentrations of benzene and bis(2-chloroethyl)ether. Still different chemicals (diethyl phthalate, di-n-butyl phthalate and 1,2-trans dichloroethylene) were reported at low concentrations for Well 3D. The near absence of contamination at or near the surface (Well 3S) indicates that the contaminants detected in Well 3I did not enter the subsurface in this area but rather migrated laterally, probably from the vicinity of Well 11. The contaminants detected in Well 3D, on the other hand, are unlikely to have migrated from the surface given the current upward hydraulic gradient in this area as demonstrated by the water-level information supplied in Table 1. It is possible that these contaminants reached the base of the overburden from the surface of the site at some time in the past when gradients may have been reversed by on-site

pumping or that they migrated through the basal overburden to the area of Well 3D from an off-site location.

In either event, under current flow conditions, 1,2-trans dichloroethylene and diethyl phthalate detected in the overburden in Well 3D are not expected to enter the bedrock. Instead, the concentrations of these chemicals should diminish over time as a result of natural attenuation associated with the upward flow and ultimate discharge of ground water in the basal overburden.

In general, little or no contamination of surficial origin is expected to reach the basal overburden in view of the existing flow gradients. This is confirmed to some extent by the chemical data for Wells 3D and 7D. Where low levels of contamination are present at depth and where the presence of such contamination is not the result of deep migration from off-site sources, it is reasonable to conclude that natural attenuation will provide sufficient remediation.

The results of analyses on surface-water samples collected at the locations of staff gauges 1 (ST-1), 3 (ST-2), 4 (ST-3), 5 (ST-4), the monitoring station near Well MW3 (ST-5) and the confluence of Ackermans Creek and its main (on-site) tributary (ST-6) are presented in Table 5. Out of the six surface-water samples analyzed, only two contained organic contamination. The sample taken next to staff gauge 1 contained 8 ug/L 1,2-dichlorobenzene and 8 ug/L bis(2-ethylhexyl)phthalate while the sample collected from the monitoring station near Well MW3 reportedly contained 470 ug/L of methylene chloride. In view of the volatility of methylene chlo-

ride, the semi-turbulent flow of the creek and the absence of any other contaminants at this location, as well as past experience with non-representative values biased by residual concentrations of this chemical in sample shuttles and laboratory equipment, the representativeness of the 470 ug/L value must be questioned. This effectively leaves only one instance in which contamination, occurring at low levels (below state water quality guidelines), was detected in the surface-water bodies adjoining and draining the site.

The general absence of detectable organic contamination in the surface water bodies sampled during this investigation indicates that the discharge of contaminated ground water to adjoining surface-water bodies has essentially no measureable impact on the quality of water in these streams, creeks, and drainage channels. The elevated levels of lead and manganese found in most of the surface-water samples is believed to be a function of the greater suspended/dissolved solids content of surface waters in comparison to ground water.

Although surface waters intercept much of the contamination in the water-table system, the possibility of limited off-site migration exists in the area north and northeast of Monitoring Well 6. In view of this possibility, additional field work should be considered to identify conditions in this area.

Chemical Quality of Selected Soil Samples

Soil samples were routinely collected during the drilling of the monitoring wells and qualitatively examined in the field for the presence of any contamination. In addition, seven soil borings were drilled to collect soil samples for analysis as directed by the NJDEP. Their locations are shown on Plate 1. Soil samples from these borings were analyzed for the following constituents as requested by the NJDEP:

Priority pollutant volatile organics	
Priority pollutant base/neutral compounds	
Priority pollutant acid extractable compounds	
Benzoic acid	2,4,5-trichlorophenol
2-methylphenol	Aniline
4-methylphenol	Benzyl alchol
4-chloroaniline	2-nitroaniline
Dibenzo-furan	3-nitroaniline
2-methylnaphthalene	4-nitroaniline
Phenol	Lead
Arsenic	Manganese
Chromium	Zinc
Cyanide	Cadmium

The results of the analytical testing on selected samples from the seven borings are provided in Table 4. The highest total contaminant concentration for volatile organics, base/neutral compounds, acid extractable compounds and the 12 additional organic compounds (103,140 micrograms/kilogram or ppb) was detected in a soil sample from Boring 3 which is located adjacent to Monitoring Well MW17 in one of the two former wastewater lagoons. Other borings exhibiting contamination with respect to these organic compounds are, in order of descending total contaminant levels: Boring 4

TABLE 4. SUMMARY OF SOIL QUALITY DATA AT UOP INC.'S PLANT SITE IN EAST RUTHERFORD, NEW JERSEY

VOLATILE ORGANIC COMPOUNDS	SAMPLE DEPTH	CHEMICAL CONCENTRATIONS (reported in micrograms / kilogram, except where noted)						DETECTION LIMIT	
		B-1		B-2		B-3			
		8-10'	4-6'	8-10'	0-2'	8-10'	9-11'		
acrolein		ND	ND	ND	ND	ND	ND	200	
acrylonitrile		ND	ND	ND	ND	ND	ND	200	
benzene		ND	ND	ND	940	ND	ND	200	
carbon tetrachloride		ND	ND	ND	ND	ND	ND	200	
chlorobenzene		ND	ND	ND	3400	ND	ND	200	
1,2-dichloroethane		ND	ND	ND	ND	ND	ND	200	
1,1,1-trichloroethane		ND	ND	ND	ND	ND	ND	200	
1,1-dichloroethane		ND	ND	ND	ND	ND	ND	200	
1,1,2-trichloroethane		ND	ND	ND	ND	ND	ND	200	
1,1,2,2-tetrachloroethane		ND	ND	ND	ND	ND	ND	200	
chloroethane		ND	ND	ND	ND	ND	ND	200	
2-chloroethyl vinyl ether		ND	ND	ND	ND	ND	ND	200	
chloroform		ND	ND	ND	ND	ND	ND	200	
1,1-dichloroethylene		ND	ND	ND	ND	ND	ND	200	
1,2-trans-dichloroethylene		ND	ND	ND	1800	ND	ND	200	
1,2-dichloropropane		ND	ND	ND	ND	ND	ND	200	
1,3-dichloropropylene		ND	ND	ND	ND	ND	ND	200	
ethylbenzene		ND	ND	ND	2600	ND	ND	200	
methylene chloride		ND	ND	ND	ND	ND	33,000	200	
methyl chloride		ND	ND	ND	ND	ND	ND	200	
methyl bromide		ND	ND	ND	ND	ND	ND	200	
bromoform		ND	ND	ND	ND	ND	ND	200	
dichlorobromomethane		ND	ND	ND	ND	ND	ND	200	
trichlorofluoromethane		ND	ND	ND	ND	ND	ND	200	
dichlorodifluoromethane		ND	ND	ND	ND	ND	ND	200	
chlorodibromomethane		ND	ND	ND	ND	ND	ND	200	
tetrachloroethylene		ND	ND	ND	920	ND	ND	200	
toluene		ND	ND	ND	16000	ND	ND	200	
trichloroethylene		ND	ND	ND	280	ND	ND	200	
vinyl chloride		ND	ND	ND	ND	ND	ND	200	
acetone		ND	ND	ND	ND	ND	ND	200	
2-butanone		ND	ND	ND	ND	ND	ND	200	
carbon disulfide		ND	ND	550	ND	230	790	200	
2-hexanone		ND	ND	ND	ND	ND	ND	200	
4-methyl-2-pentanone		ND	ND	ND	ND	ND	ND	200	
stryrene		ND	ND	ND	ND	ND	ND	200	
vinyl acetate		ND	ND	ND	ND	ND	ND	200	
total xylenes		ND	ND	ND	35000	ND	ND	200	

TABLE 4. (Continued/page 2)

CHEMICAL CONCENTRATIONS (reported in micrograms/kilogram, except where noted)

TABLE 4. (continued/page 3)

## CHEMICAL CONCENTRATIONS (Reported in micrograms/kilogram except where noted)

ACID EXTRACTABLE COMPOUNDS	SAMPLE DEPTH	=====						DETECTION LIMIT	
		B-1		B-2		B-3			
		8-10'	4-6'	8-10'	0-2'	8-10'	9-11'		
SAMPLING DATE:	11/83	11/7/83	11/7/83	11/7/83	11/7/83	11/7/83	11/8/83		
2,4,6-trichlorophenol	ND	ND	ND	ND	ND	ND	ND	200	
p-chloro-m-cresol	ND	ND	ND	ND	ND	ND	ND	200	
2-chlorophenol	ND	ND	ND	ND	ND	ND	ND	200	
2,4-dichlorophenol	ND	ND	ND	ND	ND	ND	ND	200	
2,4-dimethylphenol	ND	ND	ND	ND	ND	ND	ND	200	
2-nitrophenol	ND	ND	ND	ND	ND	ND	ND	200	
4-nitrophenol	ND	ND	ND	ND	ND	ND	ND	200	
2,4-dinitrophenol	ND	ND	ND	ND	ND	ND	ND	200	
2,6-dinitro-o-cresol	ND	ND	ND	ND	ND	ND	ND	200	
pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	200	
phenol	ND	ND	ND	3400	ND	ND	ND	200	
 NON-PRIORITY POLLUTANT HAZARDOUS COMPOUNDS									
benzoic acid	ND	ND	ND	ND	ND	ND	ND	200	
2-methylphenol	ND	ND	ND	ND	ND	ND	ND	200	
4-methylphenol	ND	ND	ND	ND	ND	ND	ND	200	
2,4,5-trichlorophenol	ND	ND	ND	ND	ND	ND	ND	200	
aniline	ND	ND	ND	ND	ND	ND	ND	200	
benzyl alcohol	ND	ND	ND	ND	ND	ND	ND	200	
4-chloroaniline	ND	ND	ND	ND	ND	ND	ND	200	
dibenzofuran	ND	ND	ND	ND	ND	ND	ND	200	
2-methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	200	
2-nitroaniline	ND	ND	ND	ND	ND	ND	ND	200	
3-nitroaniline	ND	ND	ND	ND	ND	ND	ND	200	
4-nitroaniline	ND	ND	ND	ND	ND	ND	ND	200	
 OTHER CONSTITUENTS									
phenol as phenol (mg/kgm)	0.001	0.001	0.001	0.069	0.001	0.001	ND		
arsenic as As (mg/kgm)	0.49	0.58	1.3	63	0.60	1.8	0.002		
chromium as Cr (mg/kgm)	10	26	850	5200	26	5.6	0.005		
cyanide as CN (mg/kgm)	0.3	0.3	0.3	110	0.3	0.3	0.02		
lead as Pb (mg/kgm)	4.3	7.1	13	68	2.0	2.9	-		
manganese as Mn (mg/kgm)	5	380	650	20,000	22	45	-		
zinc as Zn (mg/kgm)	20	32	50	72	20	21	0.02		
cadmium as Cd (mg/kgm)	0.011	0.088	0.060	0.24	0.013	0.013	0.001		



TABLE 4. (continued/page 5)

CHEMICAL CONCENTRATIONS (reported in micrograms / kilogram, except where noted)

TABLE 4. (Continued/page 6)

CHEMICAL CONCENTRATIONS (reported in micrograms / kilogram, except where noted)								
ACID EXTRACTABLE COMPOUNDS	SAMPLE DEPTH	B-5		B-6		B-7		DETECTION LIMIT
		6-8'	8-10'	6-8'	8-10'	2-6'	8-10'	
		11/8/83	11/8/83	11/9/83	11/9/83	11/7/83	11/7/83	
2,4,6-trichlorophenol	ND	ND	ND	ND	ND	ND	ND	200
p-chloro-m-cresol	ND	ND	ND	ND	ND	ND	ND	200
2-chlorophenol	ND	ND	ND	ND	ND	ND	ND	200
2,4-dichlorophenol	ND	ND	ND	ND	ND	ND	ND	200
2,4-dimethylphenol	ND	ND	ND	ND	ND	ND	ND	200
2-nitrophenol	ND	ND	ND	ND	ND	ND	ND	200
4-nitrophenol	ND	ND	ND	ND	ND	ND	ND	200
2,4-dinitrophenol	ND	ND	ND	ND	ND	ND	ND	200
2,6-dinitro-o-cresol	ND	ND	ND	ND	ND	ND	ND	200
pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	200
phenol	ND	ND	ND	ND	ND	ND	ND	200
NON-PRIORITY POLLUTANT HAZARDOUS COMPOUNDS								
benzoic acid	ND	ND	ND	ND	ND	ND	ND	200
2-methylphenol	ND	ND	ND	ND	ND	ND	ND	200
4-methylphenol	ND	ND	ND	ND	ND	ND	ND	200
2,4,5-trichlorophenol	ND	ND	ND	ND	ND	ND	ND	200
aniline	ND	ND	ND	ND	ND	ND	ND	200
benzyl alcohol	ND	ND	ND	ND	ND	ND	ND	200
4-chloroaniline	ND	ND	ND	ND	ND	ND	ND	200
dibenzofuran	ND	ND	ND	ND	ND	ND	ND	200
2-methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	200
2-nitroaniline	ND	ND	ND	ND	ND	ND	ND	200
3-nitroaniline	ND	ND	ND	ND	ND	ND	ND	200
4-nitroaniline	ND	ND	ND	ND	ND	ND	ND	200
OTHER CONSTITUENTS								
phenol as phenol (mg/kgm)	0.002	0.031	0.002	0.001	0.001	0.001	0.001	200
arsenic as As (mg/kgm)	0.88	1.4	1.4	1.0	9.3	1.9	1.9	200
chromium as Cr (mg/kgm)	8.4	12	5.5	8	13	3.6	200	200
cyanide as CN (mg/kgm)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	200
lead as Pb (mg/kgm)	5.5	4.5	25	7	19	1.0	200	200
manganese as Mn (mg/kgm)	82	90	80	92	44	50	200	200
zinc as Zn (mg/kgm)	19	25	22	26	46	11	200	200
cadmium as Cd (mg/kgm)	0.028	0.086	0.092	0.013	0.44	0.009	0.009	200

(38,790 ppb), located between Wells 2S and 11; Boring 6 (9,240 ppb), located approximately 125 feet southeast of Well 7S; Boring 7 (5,120 ppb), adjoining Well 9; and Boring 2 (550 ppb), located in the other former wastewater lagoon. None of the organic contaminants identified above were detected in samples analyzed from Borings 1 and 5.

Concentrations of phenol, arsenic, chromium, cyanide, lead, manganese, zinc, and cadmium varied considerably among boring locations. In general, Boring 1 exhibited the lowest concentrations for almost all of the tested contaminants.

All of the information developed from the soil testing program suggests that with respect to the seven sites investigated, residual soil contamination is greatest in the area of the old wastewater lagoons (Boring 3).

This is followed by the residual soil contamination detected in Boring 4, which is greater than that observed in samples from Boring 6. Not only are these areas of soil contamination difficult to equate on a concentration basis, but in addition, the individual contaminants comprising the total values are, for the most part, markedly different. For example, xylenes, toluene, chlorobenzene, and ethylbenzene represent the bulk of the volatile contaminants detected in the sample from Boring 3, while the volatile contamination detected in Boring 4 consists primarily of methylene chloride. It is interesting to note that benzene, toluene, xylene, chlorobenzene, and ethylbenzene are the primary aromatic components of gasoline. In view of such differences, it seems reasonable to conclude that, apart from the lagoon area where contaminants were known to have been discharged,

the residual soil contamination detected at various locations across the site reflects the accidental and unrelated spills and leaks which are an undesirable consequence of normal operating procedures at chemical and manufacturing plants. The significance of the soil quality data lies in its usefulness to identify probable contaminant source areas. The information is not representative of ground-water quality conditions as residual contamination sorbed on soil particles is not readily released to the surrounding ground water.

#### Chemical Quality of Sediments

Sediment samples were collected from Ackermans Creek and adjoining tributaries in response to a request by the NJDEP. The samples were collected from the creek bed at the locations of staff gauges 4 and 5 and at three locations along Ackermans Creek which are identified by an asterisk on Plate 1. (The latter three locations coincided with intended staff gauge locations; however, due to vandalism, strong currents and heavy ice flows, surface-water gauges could not be secured at these locations). Sediment samples were analyzed for the following constituents, as required by the NJDEP:

Priority pollutant base/neutral compounds	Lead
Phenols	Manganese
Arsenic	Zinc
Chromium	Cadmium
Cyanide	

The results of the analyses on the five samples are provided in Table 5. All of the sediment samples contained detectable levels of base neutral compounds with total base neutral concentrations ranging from a low of 310

TABLE 5 SUMMARY OF SEDIMENT QUALITY DATA FROM ACKERMAN'S CREEK AND TRIBUTARIES, UOP'S INC.'S PLANT IN EAST RUTHERFORD, NEW JERSEY

BASE/NEUTRAL COMPOUNDS	SAMPLING DATE: =====	CHEMICAL CONCENTRATIONS (reported in micrograms/gram)					DETECTION LIMIT =====
		SS1 ==	SS2 ==	SS3 ==	SS4 ==	SS5 ==	
		11/28/83	11/28/83	11/28/83	11/28/83	11/28/83	
acenaphthene		ND	ND	ND	ND	ND	200
benzidine		ND	ND	ND	ND	ND	200
1,2,4-trichlorobenzene		25	ND	ND	ND	ND	200
hexachlorobenzene		ND	ND	ND	ND	ND	200
hexachloroethane		ND	ND	ND	ND	ND	200
bis(2-chloroethyl)ether		ND	ND	ND	ND	ND	200
2-chloronaphthalene		ND	ND	ND	ND	ND	200
1,2-dichlorobenzene		38	.9	1.5	11	.15	200
1,3-dichlorobenzene		14	ND	ND	ND	ND	200
1,4-dichlorobenzene		29	ND	ND	ND	ND	200
3,3'-dichlorobenzidine		ND	ND	ND	ND	ND	200
2,4-dinitrotoluene		ND	ND	ND	ND	ND	200
2,6-dinitrotoluene		ND	ND	ND	ND	ND	200
1,2-diphenylhydrazine (as azobenzene)		ND	ND	ND	ND	ND	200
fluoranthene		ND	1	.5	ND	.16	200
4-chlorophenyl phenyl ether		ND	ND	ND	ND	ND	200
4-bromophenyl phenyl ether		ND	ND	ND	ND	ND	200
bis (2-chloroisopropyl) ether		ND	ND	ND	ND	ND	200
bis (2-chloroethoxy) methane		ND	ND	ND	ND	ND	200
hexachlorobutadiene		ND	ND	ND	ND	ND	200
hexachlorocyclopentadiene		ND	ND	ND	ND	ND	200
isophorone		ND	ND	ND	ND	ND	200
napthalene		ND	ND	ND	ND	ND	200
nitrobenzene		ND	ND	ND	ND	ND	200
N-nitrosodiphenylamine		ND	2	ND	ND	ND	200
N-nitrosodi-n-propylamine		ND	ND	ND	ND	ND	200
bis (2-ethylhexyl) phthalate		ND	10	16	1.8	ND	200
butyl benzyl phthalate		ND	ND	ND	ND	ND	200
di-n-butyl phthalate		ND	ND	ND	.07	ND	200
di-n-octyl phthalate		ND	ND	ND	ND	ND	200
diethyl phthalate		ND	ND	ND	ND	ND	200
dimethyl phthalate		ND	ND	ND	ND	ND	200
benzo(a)anthracene		ND	.6	ND	.1	ND	200
benzo(a)pyrene		ND	.5	.5	.11	ND	200
3,4-benzofluoranthene		ND	.7	.5	.22	ND	200
benzo(k)fluoranthene		ND	.7	.5	.22	ND	200
chrysene		ND	.6	.6	.12	ND	200
acenaphthylene		ND	ND	ND	ND	ND	200
anthracene		ND	.6	ND	ND	ND	200
benzo(ghi)perylene		ND	ND	ND	.06	ND	200
fluorene		ND	ND	ND	ND	ND	200
phenanthrene		ND	.6	ND	.1	ND	200
dibenzo(a,h)anthracene		ND	ND	ND	ND	ND	200
indeno(1,2,3-cd)pyrene		ND	ND	ND	.06	ND	200
pyrene		ND	1.1	.6	.18	ND	200

TABLE 5 SUMMARY OF SEDIMENT QUALITY DATA FROM ACKERMAN'S CREEK AND TRIBUTARIES, UOP'S INC.'S PLANT IN EAST RUTHERFORD, NEW JERSEY

OTHER CONSTITUENTS	SAMPLING DATE:	CHEMICAL CONCENTRATIONS					DETECTION LIMIT
		SS1 ==	SS2 ==	SS3 ==	SS4 ==	SS5 ==	
	SAMPLING DATE:	11/28/83	11/28/83	11/28/83	11/28/83	11/28/83	
phenol as phenol (mg/kgm)		17	1.6	.8	.9	.1	ND
arsenic as As (mg/kgm)		12	20	1.9	4.4	1.8	0.002
chromium as Cr (mg/kgm)		660	4000	160	130	7.8	0.005
cyanide as CN (mg/kgm)		5.9	11	ND	ND	ND	0.02
lead as Pb (mg/kgm)		88	80	25	25	3.8	-
manganese as Mn (mg/kgm)		3200	1600	360	110	10	-
zinc as Zn (mg/kgm)		300	580	145	53	20	0.02
cadmium as Cd (mg/kgm)		.64	2.4	1.3	.2	.088	0.001

ug/kg (or ppb) in the sample from the station near Monitoring Well MW3 to a high of 106,000 ug/kg in the sample recovered from the creek bed next to staff gauge 4. Samples collected at the site of staff gauge 5 and at the convergence of the main channel of Ackermans Creek with its principal on-site tributary, contained roughly equivalent totals for the base neutral compounds (19,300 ug/kg versus 20,700 ug/kg, respectively). The remaining sample collected from the creek just west of the culvert under Murray Hill Parkway had a total base/neutral concentration of 11,000 ug/kg.

Concentrations for the eight remaining chemicals, phenol, arsenic, chromium, cyanide, lead, manganese, zinc, and cadmium were consistently greatest in samples collected at the locations of staff gauges 4 and 5. The lowest concentrations for all eight of these chemicals and total base/neutral compounds occurred in the sample collected from the station established near Monitoring Well MW3.

Concentrations for some of these eight chemicals exceeded the "background benchmark" values detected at the sampling station near Well MW3. Elevated levels were found at the locations of staff gauges 4 and 5.

The organic and inorganic chemical data clearly show that the sediments in the area of staff gauges 4 and 5 contain the greatest levels of contamination with respect to the five locations examined. It is important to note that although these two locations are relatively close to one another, the concentrations of individual contaminants at each site are considerably different. The absence of an obvious pattern in the concentrations reported for these two locations suggests that they do not share a

common source for all of the observed contaminants. Moreover, as was the case for the soil quality data, this chemical information identifies contaminant concentration levels that are retained by the sediments and not freely released to either surface or ground waters.

It is important to note that the findings presented in this report are based on only one round of water quality information and may not be totally representative of conditions in view of the variability commonly observed in ground-water systems (especially shallow water-table systems). Such variability is due in part to seasonal variations in precipitation, evapo-transpiration, and local/regional pumpage.

Respectfully submitted,

GERAGHTY & MILLER, INC.

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May 2, 1984

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**APPENDIX A**

**Drilling, Construction and Lithologic Information  
for Monitoring Wells and Soil Borings**

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Appendix A. Drilling, Construction, and Lithologic Information for Monitoring Wells and Soil Borings at UOP Inc.'s Plant Site, East Rutherford, New Jersey.

Field Program

Sixteen monitoring wells were installed and seven soil borings drilled at UOP Inc.'s East Rutherford, New Jersey, site between October 31 and November 17, 1983. The drilling was performed by Moretrench American Corporation (Rockaway, New Jersey) personnel licensed in the State of New Jersey, under the direction of Geraghty & Miller, Inc.

Soil borings were drilled to a depth of 10 feet using hollow-stem auger equipment. Continuous split-spoon samples were collected in each bore-hole with samples examined immediately in the field for the presence of contamination in a qualitative manner using odor, discoloration of the soil, organic vapor analysis and fluorescence under exposure to ultra violet light as indicators. Where contaminants were observed coating the soil, the relative amount of these chemicals/compounds was noted, and the sample was quickly sealed in a clean airtight glass jar provided by the analyzing laboratory (Measurement Sciences Corporation, Garden City, New York). Soil samples slated for analysis were kept cool subsequent to inspection and delivered to the laboratory at the end of every day.

The monitoring wells installed on the site can be divided into four categories:

1. Shallow well point (three installed) - which consists of a 3-foot long, 2-inch diameter, stainless steel well point coupled to black steel pipe,

which was driven to depths of between 6 to 8 feet below land surface at three locations in order to provide hydraulic and water-quality information on the peat deposits.

2. Intermediate well - in swampy area (one installed) - constructed of 11 feet of 2-inch diameter 10 slot Johnson stainless steel screen driven to a depth of 10 feet below land surface (no riser pipe was connected as the water table at this location was at land surface). Exposed screen above grade was sealed to prevent direct surface infiltration.
3. Intermediate well (ten installed) - in actuality, a water-table monitoring well, constructed of 15 feet of 2-inch diameter, 10 slot Johnson stainless steel screen coupled to black steel pipe and drilled to depths of between 16 and 18 feet below land surface. Screens were set in order to straddle the water table (i.e., extend 1 to 2 feet above the water table).
4. Basal overburden well (two installed) - constructed with 20 feet of 4-inch diameter, 20 slot Johnson stainless steel screen coupled to 4-inch diameter black steel pipe. These wells are drilled to depths of 126 feet and 132 feet below land surface, which placed the bottom of the screens in each well immediately above the surface of the Brunswick Formation (bedrock).

Wells in the first two categories were installed by driving the well point at the bottom of each to the desired depth. No soil samples were collected prior to or during the installation of these four wells. Moni-

toring wells in the third category were installed using hollow-stem auger drilling equipment. Continuous split-spoon samples were collected in all 10 of the boreholes drilled to accept these wells. The fourth and final category of wells were installed using the mud rotary drilling method. Eight-inch diameter holes were drilled for both of these deep overburden wells with split-spoon samples collected at 5-foot intervals and at perceived changes in the lithology.

Screens in all of the wells in categories 3 and 4 were gravel packed with the gravel extending 1 to 2 feet above the top of the screen (5 feet above the screen in each of the two deep overburden wells). The annular space above the gravel pack in the 10 intermediate wells was backfilled with cuttings from the borehole. In the cases of the two deep well, a 5-foot thick bentonite seal was placed on top of the gravel pack, and the remaining annular space was filled with cement grout to preclude the possibility of preferred flow/contaminant migration in the annular zone around the well casing.

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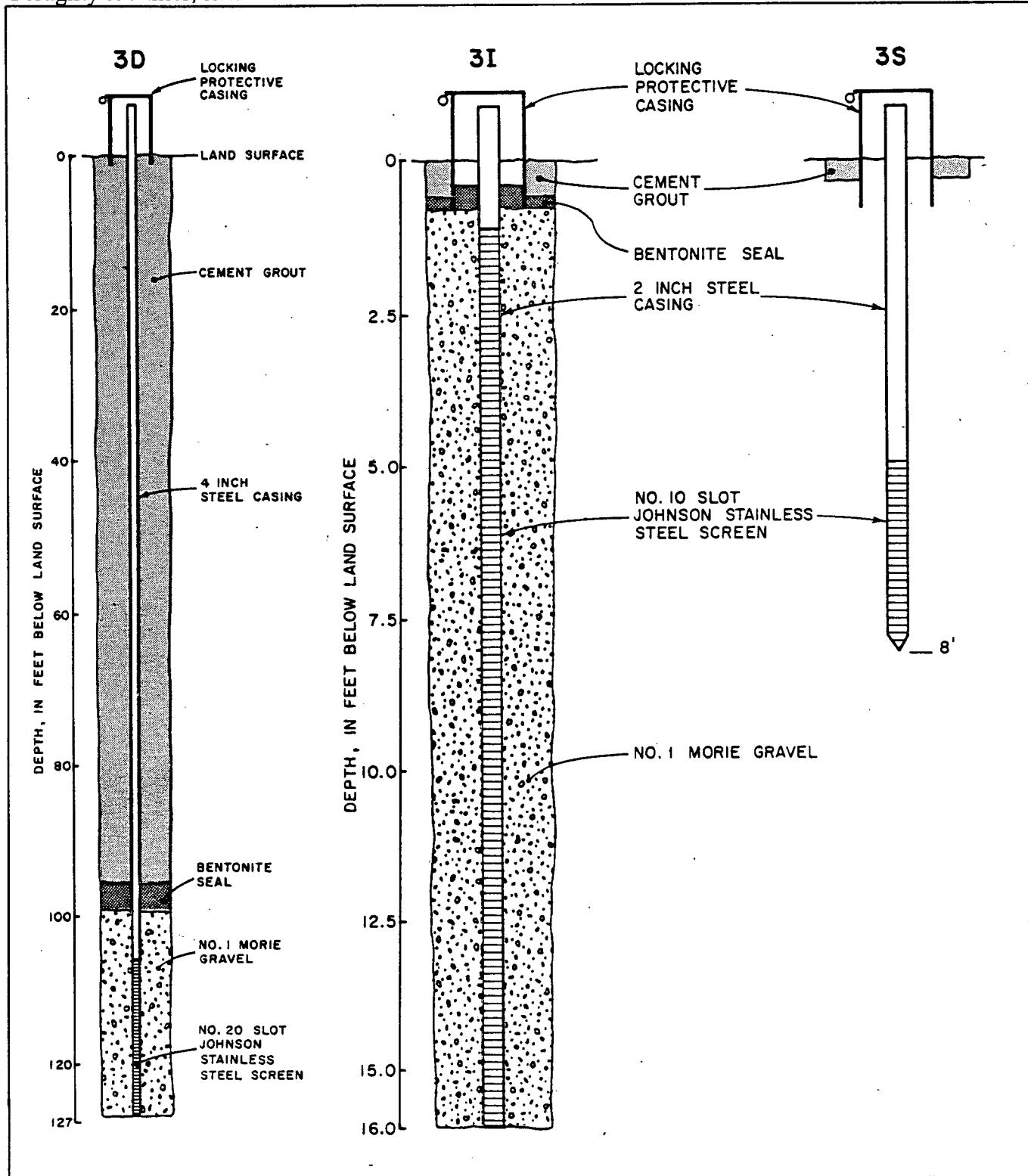


FIGURE A-1 - GENERALIZED MONITORING WELL CONSTRUCTION DETAILS  
UOP Inc., East Rutherford, New Jersey.

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Table A-1. Summary of Construction Details for Monitoring Wells 1 through 11 at UOP, Inc.'s Plant Site, East Rutherford, New Jersey.

Well No.	NJDEP Permit No.	Screened Interval	Construction Materials		Well Diameter (inches)
		(feet below land surface)	Screen	Casing	
1	26-6491	0 - 11.0	SS	ST	2
2S	26-6521	2.5 - 5.0	SS	ST	2
2I	26-6492	2.0 - 17.0	SS	ST	2
3S	26-6526	5.0 - 8.0	SS	ST	2
3I	26-6493	1.0 - 16.0	SS	ST	2
3D	26-6500	107.0 - 127.0	SS	ST	4
4	26-6494	1.0 - 16.0	SS	ST	2
5	26-6495	0 - 15.0	SS	ST	2
6	26-6496	3.0 - 18.0	SS	ST	2
7S	26-6527	4.5 - 7.5	SS	ST	2
7I	26-6497	2.0 - 17.0	SS	ST	2
7D	26-6503	112.0 - 132.0	SS	ST	4
8	26-6498	2.0 - 17.0	SS	ST	2
9	26-6521	1.0 - 16.0	SS	ST	2
10	26-6500	1.0 - 16.0	SS	ST	2
11	26-6501	2.5 - 17.5	SS	ST	2

Note: SS - stainless steel (Johnson)  
 ST - black steel

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Table A-2. Lithologic Logs of Monitoring Wells and Soil Borings at Universal Oil Products Site, East Rutherford, New Jersey.

<u>Lithologic Description</u>	<u>Depth (feet)</u>	<u>Thickness (feet)</u>
<u>2S, 2I</u>		
Sand, medium to fine, black silt, red bricks, stones, clay	0 - 3	3
Meadow mat, brown peat; dark gray clay	3 - 5.5	2.5
Clay, blue to gray, silty; trace of fine sand	5.5 - 6	0.5
Sand, gray, medium to fine, silty; trace of clay	6 - 15.5	9.5
Clay, gray, pasty; interbedded with layers of fine gray sand	15.5 - 18	2.5
<u>3S, 3I, 3D</u>		
Sand, fine to medium, red and gray; stones	0 - 2	2
Sand, fine to medium, reddish brown; stones and rock fragments; fine gravel	2 - 6	4
Sand, fine; gray pasty clay	6 - 8	2
Silt, black	8 - 9	1
Clay, gray; trace of silt	9 - 14	5
Sand, medium to fine; little clay; trace of silt	14 - 19	5
Clay, gray, interbedded with layers of fine to medium gray sand	19 - 28	9
Clay, gray and reddish brown; interbedded with lenses of fine to medium gray sand	28 - 48	20
Clay, gray and reddish brown; interbedded with thin lenses of dark gray silt	48 - 68	20
Sand, fine to silt, reddish brown, clayey; interbedded with layers of gray pasty clay and medium to fine sand	68 - 88	20
Sand, reddish brown, fine, silty, interbedded with layers of silty red clay	88 - 126	38
Shale, red, gravel	126	
4		
Silt, Black; red silty clay; stones	2 - 2	2
Clay, red sandy, wood fragments, rocks, wet	2 - 4	2
Clay, brown, pasty	4 - 4.5	0.5
Meadow mat, brown peat	4.5 - 5	0.5
Clay, blue to gray, silty	5 - 6	1
Clay, blue to gray and olive; interbedded with lenses of fine to medium gray sand	6 - 8	2
Clay, brown, pasty	8 - 10	2
Clay, gray, pasty	10 - 13.5	3.5
Sand, gray, medium to fine, trace of silt	13.5 - 16	2.5

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Table A-2. (Continued)

<u>Lithologic Description</u>	<u>Depth (feet)</u>	<u>Thickness (feet)</u>
<u>5</u>		
Sand, fine to silt, black, brick and rock fragments	0 - 2	2
Clay, red, pasty	2 - 3	1
Sand, dark gray, medium to fine, trace of clay, wet	3 - 4	1
Meadow mat, brown peat	4 - 6	2
Clay, gray, pasty	6 - 6.5	0.5
Sand, gray and brown, fine trace of silt and clay	6.5- 7	0.5
Clay, blue to green, pasty	7 - 7.5	0.5
Sand, reddish-brown to tan, fine, trace of silt and clay	7.5- 8	0.5
Clay, brown to gray, pasty; interbedded with fine brown to gray sand	8 - 16	8
<u>6</u>		
Sand, reddish-brown, coarse to fine, silty	0 - 4	4
Silt, black, wet	4 - 5	1
Meadow mat, brown peat	5 - 7	2
Clay, gray, some fine gray sand	7 - 8	1
Clay, gray and brown; lenses of medium to fine brown sand	8 - 10.5	2.5
Sand, fine to medium, trace of silt	10.5- 13.5	3
Clay, reddish brown, interbedded with thin layers of silt to fine sand	13.5- 14	0.5
Clay, gray, silty, interbedded with layers of medium to fine gray sand	14 - 16	2
<u>7S, 7I, 7D</u>		
Silt, black, stones	0 - 4	4
Silt, black	4 - 6	2
Sand, gray, fine to medium, some clay	6 - 7.5	1.5
Clay, gray, trace of silt	7.5- 9	1.5
Sand, gray to olive, fine to medium, little silt	9 - 10	1
Clay, gray, pasty, trace of silt	10 - 23	13
Clay, gray; interbedded with thin seams of silt	23 - 48	25
Clay, gray and reddish brown, fine sand; lenses of gray clay	48 - 53	5
Silt, reddish brown fine sand; lenses of gray clay	53 - 55	2
Sand, reddish brown, fine, some silt, trace of clay; lenses of reddish-brown clay	55 - 63	8
Clay, reddish brown, pasty	63 - 68	5
Clay, reddish brown, pasty, interbedded with thin seams of red silt	68 - 78	10

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Table A-2. (Continued)

<u>Lithologic Description</u>	<u>Depth (feet)</u>	<u>Thickness (feet)</u>
<u>7S, 7I, 7D (Continued)</u>		
Silt; reddish brown fine sand; reddish-brown clay seams	78 - 80	2
Sand, reddish brown, very fine, silty, trace of clay	80 - 85	5
Clay, reddish brown; interbedded with thin lenses of red silt	85 - 90	5
Sand, reddish brown; very fine, silty	90 - 93	3
Clay, reddish brown; interbedded with thin layers of red silt	93 - 99	6
Clay, reddish brown; coarse reddish-brown sand and fine gravel	99 - 100	1
Clay, reddish brown and gray; interbedded with thin layers of red silt	100 - 110	10
Silt, reddish brown, some fine sand, trace of clay	110 - 125	15
Weathered shale, reddish brown fine sand and silt, hard	125 - 132	7
Shale, red	132	
<u>8</u>		
Bricks and concrete	0 - 4	4
Clay, gray; silt; stones	4 - 6	2
Meadow mat, brown peat	6 - 8	2
Sand, gray, fine to medium; silt	8 - 9	1
Clay, gray, pasty	9 - 10	1
Clay, reddish brown, silty; lenses of fine brown sand	10 - 16	6
<u>9 B-7</u>		
Silt, black, brown peat	0 - 2	2
Fill, black silt, glass	2 - 6	4
Clay, gray, pasty	6 - 7.5	1.5
Clay, gray to olive, silty; lenses of fine gray sand	7.5- 10	2.5
Clay, reddish brown, silty; interbedded with layers of fine brown sand	10.5- 14	4
Clay, gray, silty, interbedded with layers of brown fine sand	14 - 16	2
<u>10</u>		
Rocks, stones	0 - 2	2
Clay, gray, silty	2 - 2.5	0.5
Meadow mat, brown peat	2.5- 3.5	1
Sand, reddish brown, fine to medium, trace of silt	3.5- 4	0.5
Meadow mat, brown peat	4 - 6	2

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Table A-2. (Continued)

<u>Lithologic Description</u>	<u>Depth (feet)</u>	<u>Thickness (feet)</u>
<u>10 (Continued)</u>		
Clay, blue to gray, silty; trace of fine sand	6 - 9	3
Sand, olive and gray, medium to fine; trace of silt and clay	9 - 11.5	2.5
Clay, gray, silty, some fine sand; interbedded with layers of gray medium to fine silty sand	11.5- 16	4.5
<u>11</u>		
Sand, black, medium to fine, silty	0 - 1.5	1.5
Sand, reddish brown, trace of clay, stones	1.5- 2	0.5
Sand, gray, fine to medium, trace of silt	2 - 5	3
Clay, blue to gray, pasty	5 - 6	1
Meadow mat, brown peat	6 - 7	1
Clay, blue to gray, silty	7 - 7.5	0.5
Sand, gray, fine to medium, trace of silt, little clay	7.5- 8	0.5
Sand, dark gray, trace of silt	8 - 10	2
Clay, reddish brown, silty	10 - 14	4
Clay, gray, some silt; interbedded with layers of medium to fine gray sand	14 - 16	2
<u>B-1</u>		
Silt, black and brown, trace of clay; red brick frag- ments and fill material	0 - 6	6
Sand, gray, medium to fine, some silt, trace of clay	6 - 10	4
<u>B-2</u>		
Silt, black	0 - 2	2
Meadow mat, brown peat	2 - 4	2
Clay, gray, pasty; trace of fine sand and silt	4 - 6.5	2.5
Sand, gray, medium to fine, trace of silt, inter- bedded with gray pasty clay	6.5- 9	2.5
Clay, reddish brown, silty, interbedded with layers of fine sand	9 - 10	1
<u>B-3</u>		
Waste material, pasty, black, white and green	0 - 2	2
Meadow mat, brown peat	2 - 4	2
Clay, gray, silty, interbedded with gray fine to medium silty sand	4 - 7.5	3.5

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Table A-2. (Continued)

<u>Lithologic Description</u>	<u>Depth (feet)</u>	<u>Thickness (feet)</u>
<u>B-3 (Continued)</u>		
Sand, gray, fine to medium, trace of silt and clay	7.5- 10	2.5
<u>B-4</u>		
Silt, black	0 - 2	2
Clay, reddish brown, silty, red shale fragments	2 - 5	3
Meadow mat, brown peat	5 - 6	1
Clay, gray, trace of fine sand and silt	6 - 10	4
<u>B-5</u>		
Silt, rocks, stones	0 - 2	2
Clay, reddish brown, trace of fine sand; sandstone and red shale fragments	2 - 4.5	2.5
Meadow mat, brown peat	4.5- 6.5	2
Clay, gray, fine gray sand; interbedded with gray and olive fine to medium sand	6.5- 10	3.5
<u>B-6</u>		
Silt, rocks	0 - 2	2
Sand, brown, medium to fine, trace of silt	2 - 3.5	1.5
Silt, black, clayey	3.5- 6	2.5
Meadow mat, brown peat	6 - 8	2
Clay, dark gray, silty; lenses of fine sand	8 - 9	1
Sand, gray, medium to fine, trace of silt	9 - 9.5	0.5
Clay, gray, pasty	9.5- 10	0.5

Geraghty & Miller, Inc.

APPENDIX B

Procedures for and Results of Permeability  
Testing on Selected Overburden Samples

Geraghty & Miller, Inc.

Appendix B. Procedures for and Results of Permeability Testing on Selected Overburden Samples.

Four 3-inch diameter, thin-walled tube samples (Shelby tubes) were collected from selected depths at the UOP site to develop information on the permeability values of the peat, silt, sand (fine to medium grained) and clay comprising the unconsolidated deposits in this area. The samples were hand delivered to Woodward-Clyde's Geotechnical Laboratory on December 28, 1983 where they were subjected to the following testing program

TEST PROCEDURES

Conventional test procedures were used to evaluate the physical parameters associated with four soil samples. Permeability tests were performed in a triaxial permeameter using demineralized water as a permeant in such a manner that the vertical permeability of the test specimen was determined (orientation of specimen parallel to the longitudinal axis of the tube sample). A backpressure of 6.5 t/ft<sup>2</sup> was applied to provide saturation.

The effective confining stress applied to each of the test specimens approximated the in-situ vertical effective stress. Calculations of these in-situ stresses were performed using an assumed total unit weight profile for the soil and in-situ water-level data.

TEST RESULTS

The results of the permeability tests performed are presented in Table B-1, along with visual descriptions of the permeability test specimens.

TABLE B-1.

VISUAL CLASSIFICATION OF SOIL SAMPLES DATA  
WITH INDEX AND PERMEABILITY DATA SUMMARY

PROJECT NO. 83C4366

PROJECT ENG. P.DUTKO

BORING NO.	Location SAMPLE NO.	Depth FT.	VISUAL CLASSIFICATION	WATER CONTENT %	W <sub>L</sub> %	W <sub>P</sub> %	% -200	COEFFICIENT OF PERMEABILITY @ 20° C CM/SEC
-	2	8.5	SP-SM, gray m-f SAND, trace silt	23.2	-	-	-	$8.6 \times 10^{-3}$
	3	10.4	alternating layers of: CL, brown medium plastic-plastic CLAY ( $\frac{1}{2}$ " to 1" thick) and SP-SM, gray-brown m-f SAND trace silt ( $\frac{1}{16}$ " to $\frac{1}{8}$ " thick)	30.4	-	-	-	$3.5 \times 10^{-6}$
	4	8.3	CL, brown with gray medium plastic silty CLAY, with gray silty m-f sand lenses at top of specimen	26.2	-	-	-	$1.2 \times 10^{-7}$
	5	5.5	ML, gray-brown non-plastic - sl. plastic SILT, trace f. sand	27.0	-	-	-	$3.4 \times 10^{-6}$
	5	6.1	SM, brown f. SAND, some silt	19.5	-	-	-	$2.1 \times 10^{-4}$

WCC L-110A (12/81)

DATE: 1/28/84

TESTED BY: RDREVIEWED BY: RD

TABLE B-2.

## **LABORATORY TESTING ASSIGNMENT AND DATA SUMMARY**

Project No. 83C4366 Project Engr P. DUTKO Assigned By E. Werth Date Assigned 12/13/83 Required ASAP

Reviewed By PSL  
Date 2/10/84  
Required ASAP

\* Indicate hold point      o/n = overnight

WCC L-600A (6/75)

Proj No. 83041366  
Boring No. 2  
Tag No. \_\_\_\_\_

## LABORATORY LOG OF TUBE SAMPLE

Proj Eng. PD Date Opened 1/3 /83 By 2  
Sample No. \_\_\_\_\_ Depth 6.5 To 9'

Tube Seals	Wax	Mech	Good	Fair	Loose	Leaking Water	Leaking Soil
Top	X		X				
Bottom	X		X				

Cutting Edge	Sharp	Dull	Nicked Mod <----->	Dented	Neck Down <-----> OK

Remarks cut 0.55 off top

	Tube Scale Ft	Jar No.	Sample Use	Depth in Ground, ft	DESCRIPTION OF SOIL AND REMARKS
	0.0	-			0.15' foot
	0.2	-			<i>DISCARDED</i>
	0.4	-	41119	6.7	
	0.6	A		7.0	SP-SM moist gray m-f SAND, trace silt drilling disturbed along side of spec. Channel along side
	0.8	-			
	1.0	-	TA139	7.5	
	1.2	B		7.5	same as
	1.4	-	LA120	7.9	
	1.6	-	C	8.0	same as
	1.8	-			
	2.0	D	Pum	8.5	pumice as above but w/o weathered zone
	2.2	-			
	2.4	-			0.10' foot

Measured length of tube = 2.45 ft Recovery 2.20 ft

Type 3 O.D. Brass Shelby \_\_\_\_\_  
Tube Steel

I.D.  $\left\{ \begin{array}{l} \text{Cutting edge}(D_e) \text{ 0.45 in.} \\ \text{Tube}(D_i) \text{ 2.880 in.} \end{array} \right.$  Inside Clearance Ratio =  $\frac{D_i - D_e}{D_e} \times 100 = \text{_____ \%}$

Total Unit Weight of Soil	Wgt. soil + tube	7890 qm	Total Unit Weight by		
	Wgt. tube	2360 qm	CUTTING EDGE (D <sub>e</sub> )	TUBE (D <sub>i</sub> )	AVE
	Wgt. wet soil	5530 qm	$\gamma_t$ _____	<u>122.49</u>	$\text{lb}/\text{ft}^3$
	Calculated by	D1	Reviewed by	<u>CD</u>	

WCC

L-202

(8/83)

Proj. No 8324366

SPECIMEN - (Set Up/Take Down)

Proj. Eng. PD

Cell No P-1 Piston dia.:  3/8";  1/2"

Type Test

Dense

File No \_\_\_\_\_

Loading :  Cyclic;  Undrained;  Compression;  Constant Cell pressure  
 Conditions:  Static;  Drained;  Extension;  Variable cell pressure

Type ....:  Isotropic;  K<sub>0</sub> stress path  
 Consolidation:  Anisotropic;  45° Stress path

Piston Screwed in:  Yes;  No

<input checked="" type="checkbox"/> Tube; <input type="checkbox"/> Block	<input type="checkbox"/> Reconstituted	<input type="checkbox"/> Impact	<input type="checkbox"/> Constant Effort
Boring No. #2	Composite No _____	<input type="checkbox"/> Static	_____ layers; <input type="checkbox"/> 16 Hammer Tamp.
Sample No D	Specimen No _____	<input type="checkbox"/> Kneading	Blows-Tamps/layer
Depth (ft) 8.5	Remarks _____	<input type="checkbox"/> Tamping	<input type="checkbox"/> Undercompaction
<input type="checkbox"/> Ends capped with Castone; <input type="checkbox"/> Geomarine Sample		<input type="checkbox"/> Other	_____ layers; <input type="checkbox"/> Uni (%)

Water Content			Final
Location			Ave
Container No	18-11		657
Wgt. Container + Wet Soil (gm)	140.45		851.00
Wgt Container + Dry Soil (gm)	130.22		721.16
Wgt. Container (gm)	33.03		178.10
Wgt. Dry Soil (gm)			543.06
WATER CONTENT (%)	23.20		23.91

See attached data sheet(s) for additional water contents

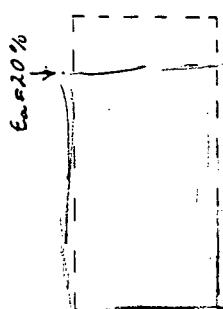
Specimen Weight
Wet + Stone (gm): 753.45
Stone (gm): 63.51
Wet Initial: 689.94
Wet Final: 632
Excess Ovendry Dish No. 632
Wgt. Dish + Dry Soil 198.51 gm
Wgt. Dish 181.48 gm
Wgt. Excess Dry Soil 17.03 gm

Dimensions of Specimen		Specimen Diameter (in) or	
Initial (L <sub>0</sub> )	Final (L <sub>f</sub> )	Initial	Final
1 3.318		1.7	2.841
2 3.316		2.11	2.860
3 3.330		3.3	2.884
4 3.322		1.7	2.839
5 3.312		2.11	2.830
Ave 3.3196		3.8	2.881

$\Delta L_c = \text{in}$    Ave 2.8558  
 $\Delta L_t = \text{in}$     $A_o = \pi D^2/4 = 6.4055 \text{ in}^2$   
 $\Sigma \Delta L = \text{in}$     $V_o = 1h^3 \cdot 16.3871 = 348.457 \text{ cm}^3$   
 $L_0 - L_f = \text{in}$     $A_{sm} = 5.4542(D^2)^2 = 10^{-3} \text{ ft}^2$

Thickness = \_\_\_\_\_ in  
 Membrane Circumference (in) = \_\_\_\_\_ in  
 $Diam \cdot \pi / \pi = \text{in}$   
 Filter Paper: Top + bottom:  Yes;  No  
 Filter Strips:  Yes;  No  
 Vertical at 1/4" - Whatman #54 or  
 Spriral at 1/4" - Whatman #1 or  
 Wgt. top cap: \_\_\_\_\_ gm,  $10^{-3} \text{ tons}$   
 Wgt. (cap, dial) = \_\_\_\_\_ gm,  $10^{-3} \text{ tons}$   
 Preliminary  $Y_{co} = 123.6 / 10^{-3} \text{ ft}^3 Y_{lo} = 100.33 / 10^{-3} \text{ ft}^3$

Failure Sketch

Final Visual Classification:  See more detailed sketch on attached sheet;  Photo Taken.

~~SP-500 gray m-f SAND to soft. varia~~

Other Remarks: ~~#200 screens~~  $T_c = 0.28 \text{ tsf}$ ,  
~~No Matrix Photo~~

Preliminary Cal. by DT Reviewed by DT

Trimmed by \_\_\_\_\_ Setup by \_\_\_\_\_ Taken down by \_\_\_\_\_  
 Compacted Date \_\_\_\_\_ Date 1/9/84 Date 1/14/84

See back for Summary Calculations

Permeability Test - Constant Head System  
(See back of data sheet for equations, test constants, etc.)

L-504  
(7/83)

Project No. 83C4366 Proj. Eng. PD

Cell No. P-1 Apparatus No C-1

Flow Direction:  Up or  Down

Test:  Water (Distilled or Demineralized or Tap)

Fluid  0.01N calcium sulfate or

Pressure Head:  Mercury Manometer:  U-tube or  Vert. Column in inch Hg

Reading In:  Pressure Gage No. PG-3 in psi or

Note: Manometer reading is differential between head & tail water

pressure, while gage readings are not.

with  $G_3 =$  \_\_\_\_\_

Trial No.	Date Reading by	Temp °C	Time hr:min	$\Delta t$ (min)	$T_c$	$U_b$	Dial Reading (inch)	Head Readings (See Above)			Total Head Uncorrected (Correction) Corrected (cm)	Flow Reading (cm)	Flow Volume (cm³) Rate (cm³/sec)	Permeability Preliminary Final @ 20°C (cm/sec)	$\Delta Q$ $\Sigma \Delta Q$	Tail Fluid Cont. No.	
								Pressure	Fluid Head (cm)	Tail (cm)							
1	1/4/84	21.8	8:52	20	93.89	90.0	S	—	—	47.4	45.3	2.1	3.4	74.592	6.0739	$\times 10^{-3}$	—
	1/4/84	11	9:12		"	"	E	—	—	"	45.3	(0.70)	2.0	—	—		
	—	RT			$\bar{T}_c = 0.28$		A	—	—	47.4	45.3	3.6	—	—	8.84		
	—	= 0.958			ts for	change	H <sub>p</sub> =		H <sub>s</sub> =	2.1	1.40	diss.	$6.22 \times 10^{-2}$	$6.22 \times 10$	$\times 10^{-3}$		
1	1/4/84	11	9:12	30	"	"	S	—	—	47.4	45.3	? 2.50	7.0	132.608	6.0469	$\times 10^{-3}$	—
	"	"	9:42		"	"	E	—	—	47.4	44.5	(0.83)	13.40	—	—		
	—	RT			$\bar{T}_c = 0.28$		A	—	—	47.4	44.9	1.67	6.4	$7.37 \times 10^{-2}$	8.78		
	—	= 0.958			ts for	change	H <sub>p</sub> =		H <sub>s</sub> =	2.5	diss.	$7.37 \times 10$	$7.37 \times 10$	$\times 10^{-3}$			
2	1/4/84	11	9:44	33	"	"	S	—	—	47.4	44.8	2.60	3.6	147.112	5.8639	$\times 10^{-3}$	—
	"	21.9	10:17		"	"	E	—	—	47.4	44.8	(0.84)	10.7	—	$\times 10^{-3}$		
	—	RT			$\bar{T}_c = 0.28$		A	—	—	47.4	44.8	7.1	7.1	$7.43 \times 10^{-2}$	8.39		
	—	= 0.957			ts for	change	H <sub>p</sub> =		H <sub>s</sub> =	2.6	1.76	diss.	$7.43 \times 10$	$\times 10^{-3}$			
3	—	11	10:17	31	"	"	S	—	—	47.4	44.8	2.60	10.7	138.82	5.891	$\times 10^{-3}$	—
	"	"	10:48		"	"	E	—	—	47.4	44.8	(0.84)	17.4	—	$\times 10^{-3}$		
	—	RT			$\bar{T}_c = 0.28$		A	—	—	47.4	44.8	6.7	6.7	$7.46 \times 10^{-2}$	8.41		
	—	= 0.955			ts for	change	H <sub>p</sub> =		H <sub>s</sub> =	2.6	1.76	diss.	$7.46 \times 10$	$\times 10^{-3}$			

S = Start E = End A = Average Prelim. Test Constant = .00342

Remarks:  $hc = 8.378$  cm  $Ac = 40.322$   $\text{cm}^2$

Calculated by DT Reviewed by DT

Ave  $k @ 20^\circ C = 8.61 \times 10^{-3}$

Sheet 1 of \_\_\_\_\_

## TRIAXIAL TEST

Project No. 83C4366 Cell No. P. 1 Test No. Bern Tested By D

Piston Screwed Into Top Cap :  Yes ;  No      Piston Weights Used:  Yes ;  No

Flow Into Specimen For:  Increasing ;  Decreasing Burrett Reading

Proving Ring No. \_\_\_\_\_ Load Cell: No. \_\_\_\_\_ Channel No. \_\_\_\_\_ Vertical Dial No. \_\_\_\_\_

Reviewed By

## **LABORATORY LOG OF TUBE SAMPLE**

(11/81)

Proj No. 83C4366

Proj Eng. P.D.

Date Opened 12-30-83

By PE

Boring No. #3

**Sample No.**

Depth \_\_\_\_\_ To 12

10/2

Tag No.

Cutting Edge	Sharp	Dull	Nicked Mod.	Dented	Neck Down OK

Tube Seals	Wax	Mech	Good	Fair	Loose	Leaking Water	Leaking Soil
Top	X				X	X	Y
Bottom	X				X	X	X

	Tube Scale Ft	Jar No.	Sample Use	Depth in Ground, ft	DESCRIPTION OF SOIL AND REMARKS
	0.0	-			0.12 VOID
	0.2	-			
	0.4	-			, 045 DISCARD
	0.6	LA-220	9.3		CUT TUBE HERE
	0.8	A	9.8		alternating layers of: Cl, moist brown med. plastic to plastic CLAY (1/2" to 1" thick) and SP-SM gray-brown m-f SAND traces silt (1/16" to 1/8" thick)
	1.0				
	1.2	LA-35	10.1		
	1.4	B Form	10.4		same as set A
	1.6				
	1.8	LA-207	10.6		same as set A
	2.0	C	10.9		
	2.2				
	2.4	LA-26	11.2		same as set A
	2.6	D	11.4		
	2.8				(DISCARD)

Measured length of tube = 3.00 ft Recovery 2.76 ft 0.12 DOD

Type 3 Brass O.D. Shelby  
Tube Steel

$$\text{I.D.} \left\{ \begin{array}{l} \text{Cutting edge}(D_e) \underline{2.470} \text{ in.} \\ \text{Tube}(D_i) \underline{2.880} \text{ in.} \end{array} \right. \quad \text{Inside Clearance Ratio} = \frac{D_i - D_e}{D_e} \times 100 = \underline{34.8} \%$$

## Remarks

Total Unit Weight of Soil	Wgt. soil + tube Wgt. tube Wgt. wet soil Calculated by	<u>9525</u> <u>2300</u> <u>550</u> <u>6675</u> <u>DJ</u>	qm	Total Unit Weight by
				CUTTING EDGE ( $D_e$ )      TUBE ( $D_i$ )      AVE
				<u>118.68</u> <u>117.86</u> <u>118.27</u> lb/ft <sup>3</sup>

SPECIMEN - (Set Up / Take Down)  
 Proj. No 83C4366 Proj. Eng. PD Cell No P-2 Piston dia.: 3/8, 1/2" L-202  
 (8/83)

Type Test PERM

File No \_\_\_\_\_

Loading :  Cyclic  Undrained  Compression  Constant Cell pressure  
 Conditions:  Static  Drained  Extension  Variable cell pressure

Type ...  Isotropic  Ko stress path Piston Screwed in:  Yes;  No  
 Consolidation:  Anisotropic  45° Stress path

<input checked="" type="checkbox"/> Tube	<input type="checkbox"/> Block	<input type="checkbox"/> Reconstituted	<input type="checkbox"/> Impact	<input type="checkbox"/> Constant Effort
Boring No. <u>#3</u>		Composite No _____	<input type="checkbox"/> Static	<u>16</u> { Hammer layers; <u>Tamp.</u>
Sample No. <u>B</u>		Specimen No. _____	<input type="checkbox"/> Kneading	<u>Blows-Tamps/layer</u>
Depth (ft) <u>10.4</u>		Remarks _____	<input type="checkbox"/> Tamping	<input type="checkbox"/> Undercompaction
<input type="checkbox"/> Ends capped with Castine; <input type="checkbox"/> Geomarine Sample			<input type="checkbox"/> Other	<u>layers;</u> <u>Uni (%)</u>

Water Content				Final
Location	<u>T</u>	<u>B</u>		Ave
Container No	<u>LA-210</u>	<u>LA-9</u>		<u>603</u>
Wgt. Container + Wet Soil (gm)	<u>166.70</u>	<u>126.59</u>		<u>320.40</u>
Wgt Container + Dry Soil (gm)	<u>89.95</u>	<u>105.00</u>		<u>279.60</u>
Wgt. Container (gm)	<u>33.06</u>	<u>32.06</u>		<u>138.51</u>
Wgt. Dry Soil (gm)			Avg.	
WATER CONTENT (%)	<u>29.44</u>	<u>29.60</u>	<u>29.52</u>	<u>28.92</u>

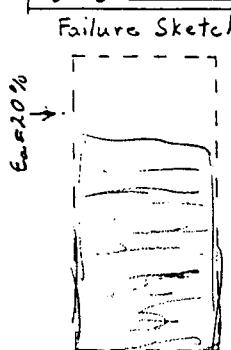
See attached data sheet(s) for additional water contents

Specimen Weight

Wet + Stone (ctd):	9 gm
Stone (ctd):	9 gm
Wet Initial:	678.07 gm
Wet Final:	670.10 gm
Excess Ovendry Dish No.	
Wgt Dish + Dry Soil	gm
Wgt. Dish	gm
Wgt. Excess Dry Soil	gm

Dimensions of Specimen		Diameter (in) or		Thickness = .012 in
Initial (L <sub>0</sub> )	Final (L <sub>f</sub> )	Initial	Final	
1 3.347	1-T 2.861			
2 3.353	2-m 2.836		*	
3 3.354	3-B 2.868			
4 3.331	1-T 2.838			
5 3.331	2-m 2.861		*	
Ave 3.3432	3-B 2.833			
$\Delta L_c =$ in	Ave 2.8495			
$\Delta L_t =$ in	$A_0 = \pi D^2/4 = 6.377 \text{ in}^2$			
$\Sigma \Delta L =$ in	$V_0 = 1\text{in}^3 \cdot 16.3871 = 349.374 \text{ cm}^3$			
$L_0 - L_f =$ in	$A_{sm} = 5.4542(D^*)^2 = 10^{-3} \text{ in}^2$			

Membrane { Thickness = .012 in  
 Circumference (cm) = in  
 Diam. = cm/π = in  
 Filter Paper: Top + bottom:  Yes;  No  
 Filter Strips:  Yes;  No  
 Vertical at 1/4" - Whatman #54 or  
 Spiral at 1/4" - Whatman #1 or  
 Wgt top cap. = gm,  $10^{-3}$  tons  
 Wgt. (cap, dial) = gm,  $10^{-3}$  tons  
 Preliminary  
 $Y_{eo} = 121.16 \frac{1}{16} \cdot 54^3 \cdot Y_{do} = 93.55 \frac{1}{16} \cdot 54^3$



Failure Sketch:  See more detailed sketch on attached sheet;  Photo Taken.

CL moist brown plastic silty CLAY! Some G-Salt & sand in seams, partings & zones voids

Other Remarks:  $\bar{f}_c = .37 \text{ TSF} = 5.16 \text{ psi}$  T.P. 90 psi  
 NO INDEX PHOTO

Preliminary Cal. by DT Reviewed by D

Trimmed by DT Setup by PE Taken down by DT  
 Compacted Date 12-30-83 Date 1/3/83

See back for Summary Calculations

L-501  
(9/83)

PERMEABILITY TEST: FALLING HEAD - CONSTANT VOLUME U-TUBE

Proj. No. 83C4366 Proj. Eng. RD Cell No. P-2 Apparatus No. 3

- Specimen - 1) Specimen Tested in: Triaxial Cell or  Compaction Mold or \_\_\_\_\_  
 Apparatus with stones or  Stones with Filter paper or  No. 200 screen reinforced with No. 10 screen or \_\_\_\_\_ top+bottom  
 Setup - Test 2) Specimen orientation for Vertical or  Horizontal permeability determination  
 Information 3) During saturation: Water flushed up sides of specimen to remove air: No or  Yes.  
 4) During consolidation: Top and bottom drainage or  Top only or  Bottom only  
 5) During permeation: Direction of permeant was: Up or  Down  
 6) Permeant: Water (Demineralized or Distilled or Tap) or  0.01 N calcium sulfate or \_\_\_\_\_

Remarks: \_\_\_\_\_

Consol. Stage- Trial No.	Read- ings B4	Date	Temp. °C	Time hr:min	$\Delta t$ (min.)	Initial $T_c$ (psic)	U <sub>b</sub> (psic)	Dial. (in)	Mercury U-Tube Reading Right, hr(cm) Left hr(cm)	Permeability (cm/sec.) Preliminary Final @ 20°C
1	8	1/3/84	21.5	8:21	3.52	95.2	90.0	55.5	60.5 46.1	$3.694 \times 10^{-6}$
	"	"	"	8:25		54.0	48.1		54.0 48.1	
1	$R_T = 0.965$				3.87	$\bar{T}_c = 0.374$ psic	ts for		$i_0 = 21.7$	$3.54 \times 10^{-6}$
2	"	"	"	8:26	3.52	"	"	"	60.5 46.1	$3.694 \times 10^{-6}$
	"	"	"	8:30		54.0	48.1		54.0 48.1	
3	$R_T = 0.965$				3.87	$\bar{T}_c = 0.374$ psic	ts for		$i_0 = 21.7$	$3.54 \times 10^{-6}$

$L_c = 8.357$  cm Remarks \_\_\_\_\_  
 $A_c = 40.129$  cm<sup>2</sup> \_\_\_\_\_  
 Calculated Using Prog. No. T.I-1DE or \_\_\_\_\_

ave.  $k @ 20^\circ C = 3.54 \times 10^{-6}$  cm/sec  
 Calculated by DT  
 Reviewed by \_\_\_\_\_

Preliminary Length/Area Cal.

$$L_0 = 3.3432 \text{ in } V_0 = 349.375 \text{ cm}^3$$

$$\Delta L_c = 0.53 \text{ in } \Delta V_c = 3 \cdot V_0 \cdot \frac{\Delta L_c}{L_c} =$$

$$L_c = 3.2902 \text{ in } : 16.616 \frac{L_c}{cm^3}$$

$$= 8.357 \text{ cm } V_c = 332.757 \text{ cm}^3$$

$$A_c = 39.818 \text{ cm}^2$$

Mercury Head Settings

- $\Delta H_g$  in cm for 50% or  $\% \bar{T}_c$   
 $= 0.5$  or  $[\bar{T}_c (\text{psic}) / 0.1784]$   
 $= \text{cm Hg}$
- $i = \frac{h}{L} = \frac{\Delta H_g (\text{cm})}{L_c (\text{cm})} \times 12.572 @ 21.7^\circ C$

Conversion 1 cm/sec = 1.969 ft/min = 28.35 ft/day =  $1.035 \times 10^{-6}$  ft/yr = 14.73 (gal/min)/ft<sup>2</sup>

Factors: 1 cm of mercury in U-tube corrected for water leg =  $0.012544 \text{ kg/cm}^2 = 0.1784 \text{ psic} @ 21.7^\circ C$

## **TRIAXIAL TEST**

Project No. 83C4366 Cell No. P-2 Test No. \_\_\_\_\_ Tested By PE

Piston Screwed Into Top Cap :  Yes ;  No      Piston Weights Used:  Yes ;  No

Flow Into Specimen For:  Increasing ;  Decreasing Burrett Reading

Proving Ring No. \_\_\_\_\_ Load Cell: No. \_\_\_\_\_ Channel No. \_\_\_\_\_ Vertical Dial No. E-12

Proj. No. 83C436 Proj. Eng. PD

## WATER CONTENT

Set-up by PE Weighed by PE Calculated by DT

Date Set-up 12-30-83

Reviewed by O

Boring No.	#3		→					
Sample No.								
Depth (ft)	9.5	10.1	10.6	11.2				
Unified Soil Classif. Group Symbol (Visual)								
Container No.	LA-220	LA-35	LA-207	LA-20				
Wgt. Container + Wet Soil (gm)	75.43	87.37	88.37	84.27				
Wgt. Container + Dry Soil (gm)	66.61	75.06	75.50	73.10				
Wgt. Container (gm)	13.10	33.77	32.93	33.95				
Water Content (%)	26.32	29.81	30.23	28.55				
Oven temp if other than 110°C								

Boring No.								
Sample No.								
Depth (ft)								
Unified Soil Classif. Group Symbol (Visual)								
Container No.								
Wgt. Container + Wet Soil (gm)								
Wgt. Container + Dry Soil (gm)								
Wgt. Container (gm)								
Water Content (%)								
Oven temp if other than 110°C								

Boring No.								
Sample No.								
Depth (ft)								
Unified Soil Classif. Group Symbol (Visual)								
Container No.								
Wgt. Container + Wet Soil (gm)								
Wgt. Container + Dry Soil (gm)								
Wgt. Container (gm)								
Water Content (%)								
Oven temp if other than 110°C								

83C4366  
 Proj. No.            Proj. Eng. PD Set-up by            WATER CONTENT Weighed by            Calculated by DT Date Set-up 1/3/86  
 Reviewed by           

Boring No.	2			5		
Sample No.						
Depth (ft)	6.7	7.3	7.9	4.7	5.2	5.7
Unified Soil Classif. Group Symbol (Visual)				P.T.		
Container No.	A119	1A139	CA120	B-27	1A122	CA205
Wgt. Container + Wet Soil (gm)	146.65	141.82	145.09	60.85	105.49	111.58
Wgt. Container + Dry Soil (gm)	129.17	122.89	125.02	42.32	89.79	94.64
Wgt. Container (gm)	34.8 ✓	34.43	34.69	32.99	34.63	33.15
Water Content (%)	18.53	21.40	22.22	198.61	28.46	27.55
Oven temp if other than 110°C						

Boring No.						
Sample No.						
Depth (ft)						
Unified Soil Classif. Group Symbol (Visual)						
Container No.						
Wgt. Container + Wet Soil (gm)						
Wgt. Container + Dry Soil (gm)						
Wgt. Container (gm)						
Water Content (%)						
Oven temp if other than 110°C						

Boring No.						
Sample No.						
Depth (ft)						
Unified Soil Classif. Group Symbol (Visual)						
Container No.						
Wgt. Container + Wet Soil (gm)						
Wgt. Container + Dry Soil (gm)						
Wgt. Container (gm)						
Water Content (%)						
Oven temp if other than 110°C						

TABLE B-3.

## **LABORATORY TESTING ASSIGNMENT AND DATA SUMMARY**

Reviewed By RSL  
Date 2/10/84

Project No. 83C4366 Project Engr P.Dutko Assigned By E.Werth Date Assigned 12/83 Required ASAP

- Indicate hold point      o/n = overnight

## LABORATORY LOG OF TUBE SAMPLE

Proj No. 73C4366  
Boring No. #4  
Tag No. \_\_\_\_\_

Proj Eng. PD Date Opened 12-30-73 By OE  
Sample No. \_\_\_\_\_ Depth 8 To 10

Tube Seals	Wax	Mech	Good	Fair	Loose	Leaking Water	Leaking Soil
Top	X					X	X
Bottom	X				X	X	X

Cutting Edge	Sharp	Dull	Nicked Mod.	Dented	Neck Down OK
	X				

Remarks cut 1.97 ft

	Tube Scale Ft	Jar No.	Sample Use	Depth in Ground, ft	DESCRIPTION OF SOIL AND REMARKS
	0.0	—			
	0.2	—			0.32 VOID
	0.4	—			CL-wet soft brown w/grey med plastic
	0.6	A <u>from</u> 8.3			Silty CLAY with grey silty m-f sand lenses at top
	0.8	—			
	1.0	—			0.13 VOID
	1.2	—			
	1.4	—			
	1.6	—			
	1.8	—			
	2.0	—			
	2.2	—			
	2.4	—			

Measured length of tube = 1.02 ft Recovery 0.5 ft

Type 3 O.D. Brass Shelby \_\_\_\_\_  
Tube Steel \_\_\_\_\_

I.D. { Cutting edge( $D_e$ ) 2.875 in. Inside Clearance Ratio =  
Tube( $D_i$ ) 2.880 in.  $\frac{D_i - D_e}{D_e} \times 100 = 0.174\%$

Total Unit Weight of Soil	Wgt. soil + tube	$\gamma_t$	Total Unit Weight by CUTTING EDGE ( $D_e$ )	TUBE ( $D_i$ )	AVE
	<u>2428</u> qm	<u>123.54</u>	<u>123.11</u>	<u>123.33</u>	<u>lb/ft<sup>3</sup></u>
	<u>988</u> qm				
	<u>1440</u> qm				
	Calculated by <u>DT</u>	Reviewed by <u>RS</u>			

## SPECIMEN - (Set Up / Take Down)

WCC

L-202

(8/83)

Proj. No 83C4366 Proj. Eng. PD Cell No P-3 Piston dia.: 3/8, 1/2"Type Test PERM

File No \_\_\_\_\_

Loading :  Cyclic  Undrained  Compression  Constant Cell pressure  
 conditions:  Static  Drained  Extension  Variable cell pressure

Type ... <input checked="" type="checkbox"/> Isotropic <input type="checkbox"/> Ko stress path	Piston Screwed in: <input type="checkbox"/> Yes; <input checked="" type="checkbox"/> No
Consolidation: <input type="checkbox"/> Anisotropic <input type="checkbox"/> 45° Stress path	

<input checked="" type="checkbox"/> Tube <input type="checkbox"/> Block <input type="checkbox"/> Reconstituted	<input type="checkbox"/> Impact <input type="checkbox"/> Constant Effort
Boring No. <u>#4</u>	<input type="checkbox"/> Static <input type="checkbox"/> layers; <u>1b</u> Hammer
Sample No. <u>A</u>	<input type="checkbox"/> Kneading <input type="checkbox"/> Tamps <u>Tamp.</u>
Depth (ft) <u>6.3</u>	<input type="checkbox"/> Tamping <input type="checkbox"/> Blows-Tamps/layer
<input type="checkbox"/> End caged with Castane; <input type="checkbox"/> Geomarine Sample	<input type="checkbox"/> Undercompaction <input type="checkbox"/> Other <input type="checkbox"/> layers; <u>Uni (%)</u>

Water Content				Final
Location	T	B	Ave	
Container No	<u>CA-28</u>	<u>CB-24</u>	<u>63.5</u>	
Wgt. Container + Wet Soil (gm)	<u>81.50</u>	<u>90.00</u>	<u>352.40</u>	
Wgt Container + Dry Soil (gm)	<u>71.60</u>	<u>80.20</u>	<u>31.9.97</u>	
Wgt. Container (gm)	<u>34.10</u>	<u>33.52</u>	<u>178.71</u>	
Wgt. Dry Soil (gm)			<u>Avg.</u>	
WATER CONTENT (%)	<u>26.40</u>	<u>20.99</u>	<u>23.70</u>	<u>22.96</u>

See attached data sheet(s) for additional water contents

Specimen Weight
Wet + Stone (gm) : <u>888.08</u> gm
Stone (gm) : <u>99.60</u> gm
Wet Initial : <u>788.48</u> gm
Wet Final : <u>768.23</u> gm
Excess Ovendry. Dish No. _____
Wgt. Dish + Dry Soil _____ gm
Wgt. Dish _____ gm
Wgt. Excess Dry Soil _____ gm

Dimensions of Specimen		Diameter (in) or		$\frac{1}{4} \pi D^2$
Initial (L <sub>0</sub> )	Final (L <sub>f</sub> )	Initial	Final	
1 3.735	1-T 2.790			
2 3.713	2-m 2.857			
3 3.712	3-B 2.885			
4 3.750	1-T 2.815			
5 3.734	2-m 2.858			
Ave 3.7288	3-B 2.882			
$\Delta L_c =$ _____ in	Ave 2.8478			
$\Delta L_t =$ _____ in	$A_c = \pi D^2/4 = 6.370 \text{ in}^2$			
$\Sigma \Delta L =$ _____ in	$V_0 = 1 \text{ in}^3 \cdot 16.3871 = 389.215 \text{ cm}^3$			
$L_0 - L_f =$ _____ in	$A_{sm} = 5.4542(D^2)^2 = 10^{-3} \text{ ft}^2$			

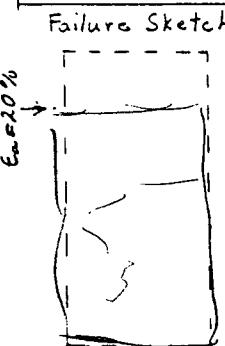
Membrane { Thickness = .012 in  
 Circumference (in) = \_\_\_\_\_ in  
 Diam. (cm) /  $\pi$  = \_\_\_\_\_ in

Filter Paper: Top + bottom:  Yes;  No

Filter Strips:  Yes;  No  
 Vertical at  $\frac{1}{4}$ " - Whatman #54 or  
 Spriral at  $\frac{1}{4}$ " - Whatman #1 or

Wgt top cap: \_\_\_\_\_ gm,  $10^{-3}$  tons  
 Wgt (cap, dial) = \_\_\_\_\_ gm,  $10^{-3}$  tons

Preliminary  
 $Y_{co} = 126.47 \text{ lb/ft}^3 Y_{do} = 102.24 \text{ lb/ft}^3$



Failure Sketch:  See more detailed sketch on attached sheet;  Taken.

Cf. moist grey-brown mottled plastic Silty  
Clayey organized C-Si-Lt. Chunks -

Other Remarks: No INDEX PHOTO

.27 TSF = 7 C = 3.75 psf B.P. 90 psf

Preliminary Cal. by DT Reviewed by DD

Trimmed by \_\_\_\_\_ Set up by PE Taken down by 2  
 Compacted Date 12-30-83 Date 1/3/84

See back for Summary Calculations

L-501  
(9/83)

PERMEABILITY TEST: FALLING HEAD - CONSTANT VOLUME U-TUBE

Proj. No. 83C4366 Proj. Eng. PD Cell No. P3 Apparatus No. 2

- Specimen- 1) Specimen Tested in: Triaxial Cell or  Compaction Mold or \_\_\_\_\_  
 Apparatus with stones or  Stones with filter paper or  No. 200 screen reinforced with No. 10 screen or \_\_\_\_\_ top + bottom  
 Setup - Test 2) Specimen orientation for Vertical or  Horizontal permeability determination  
 Information 3) During saturation: Water flushed up sides of specimen to remove air: No or  Yes.  
 4) During consolidation: Top and bottom drainage or  Top only or  Bottom only  
 5) During permeation: Direction of permeant was: Up or  Down  
 6) Permeant: Water (Demineralized or Distilled or Tap) or  0.01 N calcium sulfate or \_\_\_\_\_

Remarks:

Consol. Stage- Trial No.	Read- ings By	Date	Temp. °C	Time hr:min	$\Delta t$ (min.)	Initial $T_c$ (psi)	U <sub>b</sub> (psi)	Dial. (in)	Mercury U-Tube Reading Right, hr (cm)	Left hr (cm)	Permeability (cm/sec.) Preliminary Final @ 20°C
1	2	1/3/84	21.5	8:19	37	93.7	90	552	57.6	46.7	$1.3968 \times 10^{-7}$
	4	"	21.5	8:55					55.5	47.4	
	X	R <sub>T</sub>	0.965			$\bar{T}_c = 0.266$ tstat			60	14.7	$1.37 \times 10^{-7}$
2	1	"	11	8:56	49	-	-	-	57.9	46.65	$1.1886 \times 10^{-7}$
	1	"	21.8	9:45					55.5	47.4	
	X	R <sub>T</sub>	0.961			$\bar{T}_c = 0.266$ tstat			60	15.1	$1.16 \times 10^{-7}$
3	1	"	9	9:46	91	61	61	61	57.8	46.7	$1.1217 \times 10^{-7}$
	1	"	21.9	11:17					57.1	47.8	
	X	R <sub>T</sub>	0.957			$\bar{T}_c = 0.266$ tstat			60	14.9	$1.09 \times 10^{-7}$

$L_c = 9.339$  cm Remarks \_\_\_\_\_

$A_c = 39.274$  cm<sup>2</sup> \_\_\_\_\_

Calculated Using Prog. No. TI-1DE or \_\_\_\_\_

Conversion 1 cm/sec = 1.969 ft/min = 28.35 ft/day =  $1.035 \times 10^6$  ft/yr = 14.73 (gal/min)/ft<sup>2</sup>

Factors: 1 cm of mercury in U-tube corrected for water leg =  $0.012544 \text{ kg/cm}^2 = 0.1784 \text{ psi}$  @ 21.7°C

Preliminary Length/Area Cal.

$$L_0 = 3.7288 \text{ in } V_0 = 389206 \text{ cm}^3$$

$$\Delta L_c = 0.52 \text{ in } \Delta V_c = 3 \cdot V_0 \cdot \frac{\Delta L_c}{L_c} =$$

$$L_c = 3.6768 \text{ in } : 16.283 \frac{L_0}{L_c} \text{ cm}^3$$

$$= 9.339 \text{ cm } V_c = 372923 \text{ cm}^3$$

$$A_c = 39.932 \text{ cm}^2$$

Mercury Head Settings:

- 1)  $\Delta H_g$  in cm for 50% or %  $\bar{T}_c$   
 $= 0.5$  or  $[\bar{T}_c (\text{psi}) / 0.1784]$   
 $=$  cm Hg
- 2)  $i = h = \frac{\Delta H_g (\text{cm})}{L_c (\text{cm})} \times 12.572 @ 21.7^\circ\text{C}$

## TRIAXIAL TEST

Project No. 83C4366 Cell No. P-3 Test No. \_\_\_\_\_ Tested By PE

Piston Screwed Into Top Cap :  Yes ;  No | Piston Weights Used:  Yes ;  No

Flow Into Specimen For:  Increasing ;  Decreasing Burrett Reading

Proving Ring No. \_\_\_\_\_ Load Cell: No. \_\_\_\_\_ Channel No. \_\_\_\_\_ Vertical Dial No. F1-11

Reviewed By

## LABORATORY LOG OF TUBE SAMPLE

Proj No. 83C4366  
Boring No. #5  
Tag No. \_\_\_\_\_

Proj Eng. TD Date Opened 1/3/83 By b.  
Sample No. \_\_\_\_\_ Depth 4.5 To 1

Tube Seals	Wax	Mech	Good	Fair	Loose	Leaking Water	Leaking Soil
Top	✓				✓		
Bottom	✓			✓			

Cutting Edge	Sharp	Dull	Nicked Mod.	Dented	Neck Down OK

Remarks act 0.95 off top

	Tube Scale Ft	Jar No.	Sample Use	Depth in Ground, ft	DESCRIPTION OF SOIL AND REMARKS
	0.0				
	0.2				<u>0.2 Vat</u>
	0.4				<u>DISCARD</u>
	0.6				<u>0.27 4.1</u> <u>class due to gravel.</u>
	0.8				<u>A 5-0 5.0' PT - organic peat w large piece of gravel</u> <u>noted</u> <u>becoming</u> )
	1.0				<u>LA122 5.2</u>
	1.2				<u>B firm 5.5</u> <u>SILT fact f. sand</u>
	1.4				<u>LA205 5.7</u>
	1.6				<u>C firm 6.1</u> <u>Top a CL-CH green-gray, silt, CLay then</u> <u>becoming SM, brown f. SAND Some silt</u>
	1.8				<u>0.10 Vat</u>
	2.0				
	2.2				<u>standard at bottom</u>
	2.4				

Measured length of tube = 2.05 ft Recovery 1.75 ft

Type 3 O.D. Brass Shelby \_\_\_\_\_  
Tube Steel \_\_\_\_\_

I.D. { Cutting edge( $D_e$ ) 2.840 in. Inside Clearance Ratio =  
Tube( $D_i$ ) 2.860 in.  $\frac{D_i - D_e}{D_e} \times 100 = \underline{0.704\%}$

Total Unit Weight of Soil	Wgt. soil + tube	Wgt. tube	Wgt. wet soil	Calculated by	Total Unit Weight by	CUTTING EDGE ( $D_e$ )	TUBE ( $D_i$ )	AVE
	<u>6210</u> qm	<u>1986</u> qm	<u>4224</u> qm	<u>DT</u>	$\gamma_t$ <u>120.96</u>	<u>119.28</u>	<u>120.12</u>	<u>lb/ft<sup>3</sup></u>
					Reviewed by <u>Re</u>			

SPECIMEN - (Set Up / Take Down)  
 Proj. No. 24366 Proj. Eng. RSL Cell No. P-3 Piston dia.:  3/8";  1/2" (8/83)

WCC  
 L-202  
 (8/83)

Type Test

File No.

Loading : <input type="checkbox"/> Cyclic . <input type="checkbox"/> Undrained <input type="checkbox"/> Compression <input checked="" type="checkbox"/> Constant Cell pressure	Conditions: <input type="checkbox"/> Static <input type="checkbox"/> Drained <input type="checkbox"/> Extension <input type="checkbox"/> Variable cell pressure	
Type ... <input checked="" type="checkbox"/> Isotropic <input type="checkbox"/> Ko stress path	Piston Screwed in: <input type="checkbox"/> Yes; <input checked="" type="checkbox"/> No	
Consolidation: <input type="checkbox"/> Anisotropic <input type="checkbox"/> 45° Stress path		
<input checked="" type="checkbox"/> Tube <input type="checkbox"/> Block <input type="checkbox"/> Reconstituted	<input type="checkbox"/> Impact <input type="checkbox"/> Constant Effort	
Boring No. <u>15</u>	Composite No. _____	<input type="checkbox"/> Static <input type="checkbox"/> layers; <input type="checkbox"/> 16 {Hammer
Sample No. <u>13</u>	Specimen No. _____	<input type="checkbox"/> Kneading <input type="checkbox"/> Blows-Tamps/layer
Depth (ft) <u>5.5</u>	Remarks _____	<input type="checkbox"/> Tamping <input type="checkbox"/> Undercompaction
<input type="checkbox"/> Ends capped with Castone; <input type="checkbox"/> Geomarine Sample	<input type="checkbox"/> Other	<input type="checkbox"/> layers; <input type="checkbox"/> Uni (%)

Water Content			Final
Location			Ave
Container No	<u>64-30</u>		<u>613</u>
Wgt. Container + Wet Soil (gm)	<u>147.78</u>		<u>301.92</u>
Wgt. Container + Dry Soil (gm)	<u>122.99</u>		<u>269.65</u>
Wgt. Container (gm)	<u>33.76</u>		<u>137.52</u>
Wgt. Dry Soil (gm)			
WATER CONTENT (%)	<u>27.78</u>		<u>24.42</u>

See attached data sheet(s) for additional water contents

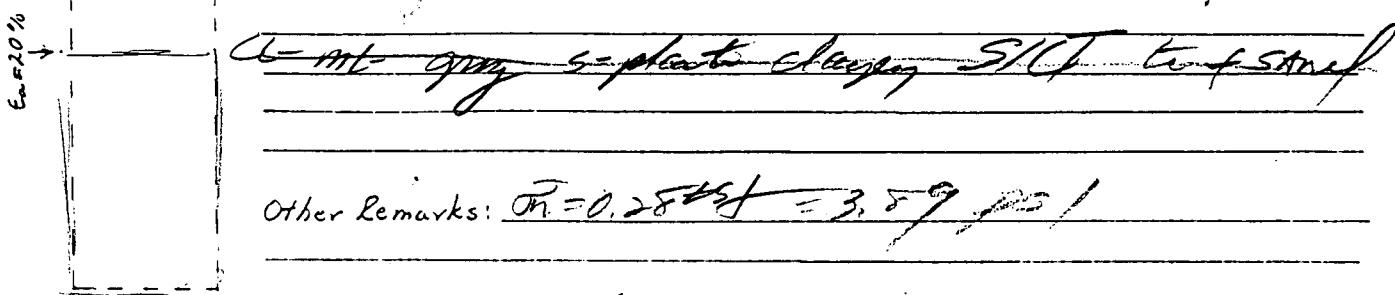
Specimen Weight
Wet + Stone (gm) : <u>866.39</u> gm
Stone (gm) : <u>42.72</u> gm
Wet Initial : <u>823.65</u> gm
Wet Final : <u>806.79</u> gm
Excess Ovendry Dish No. _____
Wgt. Dish + Dry Soil _____ gm
Wgt. Dish _____ gm
Wgt. Excess Dry Soil _____ gm

Dimensions of Specimen		Specimen Diameter (in) or	
Height (in)	Initial (L <sub>0</sub> )	Initial	Final
1	<u>3.790</u>	<u>1.72.85</u>	
2	<u>3.804</u>	<u>2-m 2.902</u>	*
3	<u>3.765</u>	<u>3.3.2.920</u>	
4	<u>3.769</u>	<u>1.7.2.861</u>	
5	<u>3.803</u>	<u>2-m 2.916</u>	*
Ave	<u>3.7862</u>	<u>3.8.2.921</u>	
ΔL <sub>c</sub> =	in	Ave <u>2.8.962</u>	
ΔL <sub>t</sub> =	in	$A_0 = \pi D^2/4 = 6.588$ in <sup>2</sup>	
ΣΔL =	in	$V_0 = \pi h^3 \cdot 16.387 = 408.735$ cm <sup>3</sup>	
L <sub>0</sub> - L <sub>5</sub> =	in	$A_{sm} = 5.4542(D^2)^2 = 10^{-3} \text{ ft}^2$	

Thickness = \_\_\_\_\_ in  
 Membrane Circumference (cm) = \_\_\_\_\_ in  
 Diam. (cm) / π = \_\_\_\_\_ in  
 Filter Paper: Top + bottom:  Yes;  No  
 Filter Strips:  Yes;  No  
 Vertical at 1/4" - Whatman #54 or  
 Spiral at 1/4" - Whatman #1 or  
 Wgt. top cap: \_\_\_\_\_ gm, \_\_\_\_\_  $10^{-3}$  tons  
 Wgt. (cap, dial) = \_\_\_\_\_ gm, \_\_\_\_\_  $10^{-3}$  tons  
 Preliminary  
 $Y_{co} = 125.80 \cdot 10^{-3} \text{ ft}^3 \cdot 98.45 \cdot 10^{-3} \text{ lb}/\text{ft}^3$

Failure Sketch

Final Visual Classification:  See more detailed sketch on attached sheet;  Taken.



Preliminary Cal. by DJ Reviewed by (Signature)

Trimmed by \_\_\_\_\_ Set up by \_\_\_\_\_ Taken down by \_\_\_\_\_  
 Reconstituted Date 1/3/83 Date 1/3/83 Date 1/5/83  
 See enclosed for Summary Calculations

L-501  
(9183)

PERMEABILITY TEST: FALLING HEAD - CONSTANT VOLUME U-TUBE

Proj. No. 83C4366 Proj. Eng. PD Cell No. P-3 Apparatus No. 2

- Specimen - 1) Specimen Tested in: Triaxial Cell or  Compaction Mold or \_\_\_\_\_  
 Apparatus with stones or  Stones with filter paper or  No. 200 screen reinforced with No. 10 screen or \_\_\_\_\_ top+bottom  
 Setup - Test  
 Information 2) Specimen orientation for Vertical or  Horizontal permeability determination  
 3) During saturation: Water flushed up sides of specimen to remove air: No or  Yes.  
 4) During consolidation: Top and bottom drainage or  Top only or  Bottom only  
 5) During permeation: Direction of permeant was: Up or  Down  
 6) Permeant: Water (~~Demineralized or Distilled or Tap~~) or  0.01 N calcium sulfate or \_\_\_\_\_

Remarks:

Consol. Stage- Trial No.	Read- ings By	Date	Temp. °C	Time hr:min	$\Delta t$ (min.)	Initial $\bar{\sigma}_c$ (psf)	U <sub>b</sub> (psf)	Dial. (in)	Mercury U-Tube Reading Right, Left hr(cm) hr(cm)	Permeability (cm/sec.) Preliminary Final @ 20°C
1	2	1/5/83	22.5	10:25	4:20	93.89	90.0.0	"	58.0 46.7	$3.4677 \times 10^{-6}$
1	1	"	"	10:29	4.33	53.0	48.0	"	53.0 48.0	$3.37 \times 10^{-6}$
	X	RT =	0.942			$\bar{\sigma}_c = 0.28$ tsfor		$6_0 = 14.85$		
1	2	"	"	10:30	4:20	"	"	"	58.0 46.7	$3.4677 \times 10^{-6}$
1	1	"	"	10:34	4.33	53.0	48.0	"	53.0 48.0	$3.37 \times 10^{-6}$
2	X	RT =	0.942			$\bar{\sigma}_c = 0.28$ tsfor		$6_0 = 14.85$		
	1	"	"	10:38	4:20	"	"	"	58.0 46.7	$3.4677 \times 10^{-6}$
1	2	"	"	10:42	4.33	53.0	48.0	"	53.0 48.0	$3.37 \times 10^{-6}$
1	X	RT =	0.942			$\bar{\sigma}_c = 0.28$ tsfor		$6_0 = 14.85$		
$L_c = 9.566' \text{ cm}$ Remarks _____										
$A_c = 40.741' \text{ cm}^2$ _____										
Calculated Using Proj. No. T.I.-1DE or _____										
ave. $k @ 20^\circ\text{C} = 3.37 \times 10^{-6} \text{ cm/sec}$										
Calculated by DT Reviewed by JF										

Preliminary Length/Area Cal.

$$L_0 = 3.7862 \text{ in. } V_0 = 408.735 \text{ cm}^3$$

$$\Delta L_c = 0.20 \text{ in. } \Delta V_c = 3 \cdot V_0 \cdot \frac{\Delta L_c}{L_c} =$$

$$L_c = 3.7662 \text{ in. } : 6.4775 \text{ cm}^3$$

$$= 9.566 \text{ cm } V_c = 409.258 \text{ cm}^3$$

$$A_c = 42.05 / \text{cm}^2$$

Mercury Head Settings:

- 1)  $DH_g$  in cm for 50% or  $\% \bar{\sigma}_c$   
 $= 0.5$  or  $[\bar{\sigma}_c (\text{psf}) / 0.1784]$   
 $= \text{cm Hg}$
- 2)  $i = \frac{h}{L} = \frac{DH_g (\text{cm})}{L_c (\text{cm})} \times 12.072 @ 21.7^\circ\text{C}$

Conversion 1 cm/sec = 1.969 ft/min = 28.35 ft/day =  $1.035 \times 10^6$  ft/hr = 14.73 (gal/min)/ft<sup>2</sup>

Factors: 1 cm of mercury in U-tube corrected for water leg =  $0.012544 \text{ kg/cm}^2 = 0.1784 \text{ psf} @ 21.7^\circ\text{C}$

TRIAXIAL TEST  
(Stage Back Pressuring/Consolidation)Project No. 83C4366 Cell No. P-3 Test No. P-9 Tested By JLPiston Screwed Into Top Cap:  Yes;  No      Piston Weights Used:  Yes;  NoFlow Into Specimen For:  Increasing;  Decreasing Burrett ReadingProving Ring No. \_\_\_\_\_ Load Cell: No. \_\_\_\_\_ Channel No. \_\_\_\_\_ Vertical Dial No. F-1-11

Stage No.	Date	Time	Elapsed Time (min)	Cell Pressure $\sigma_c$ tsf/psi	Back Pressure $U_b$ tsf/psi	Axial Load Div-lbs	Volume Change, CC			Vertical Dial (inch)
							Reading $\Delta v$	Reading $\Delta v$	Total Change	
1C	1/3/84	16:03	0	3.0	0		15.00			0.000
							11.30			.003
							4.65 (10.35)			.009
							16.00			—
							11.60			.011
							18.28			.012
							(5.11) 9.89			.0125
							16.0			—
							15.5 (0.50) (15.96)	0.12	(0.012)	
2B	1/4/84	9:10	0	3.0	0		5.00			0.012
							5.70			.014
							6.10			.013
							6.80			.017
							6.60			.018
							6.72			.015
							6.81			.016
							6.90			.016
							6.93			.017
							7.00			.018
							(-2.05) 7.05 (-2.05)	0.18	(0.006)	
							15.00			0.018
							14.60			.018
							14.51			.018
3C	1/4/84	15:21	0	93.89	90		14.32			.019
							14.20 0.80			.019 0.001
							14.16			.020
							14.07			.020
							13.89			.020
							13.85			.020
							13.80 (1.20) (1.20)	-0.20	(0.002)	
4C	1/5/84	9:09	0	93.7	only					

Reviewed By RL

## SPECIMEN - (Set Up/Take Down)

WCC

L-202

(8/83)

Proj. No 83C4366 Proj. Eng. PD Cell No P-2 Piston dia.:  3/8";  1/2"Type Test Pore

File No \_\_\_\_\_

Loading:  Cyclic -  Undrained  Compression  Constant Cell pressure  
 conditions:  Static  Drained  Extension  Variable cell pressure

Type ...  Isotropic  Ko stress path  
 Consolidation:  Anisotropic  45° Stress path

Piston Screwed in:  Yes;  No

Tube  Block  Reconstituted  
 Boring No. 15 Composite No. \_\_\_\_\_  
 Sample No. C Specimen No. \_\_\_\_\_  
 Depth (ft) 6.1 Remarks \_\_\_\_\_  
 Enclosed with Castone;  Geomarine Sample

Impact  Constant Effort  
 Static 16 Hammer layers; Tamp.  
 Kneading Blows-Tamps/layer  
 Tamping  Undercompaction  
 Other layers; Uni (%)

Water Content			Final
Location			Ave
Container No	<u>4A135</u>		<u>652</u>
Wgt. Container + Wet Soil (gm)	<u>94.95</u>		<u>1053.20</u>
Wgt. Container + Dry Soil (gm)	<u>84.93</u>		<u>905.18</u>
Wgt. Container (gm)	<u>34.50</u>		<u>177.85</u>
Wgt. Dry Soil (gm)			<u>727.33</u>
WATER CONTENT (%)	<u>19.87</u>		<u>20.35</u>

See attached data sheet(s) for additional water contents

Specimen Weight

Wet + Stone (gm)	<u>9m</u>
Stone (gm)	<u>9m</u>
Wet Initial:	<u>882.35</u> gm
Wet Final:	<u>882.35</u> gm
Excess Ovendry Dish No	<u>383</u>
Wgt. Dish + Dry Soil	<u>205.62</u> gm
Wgt. Dish	<u>194.84</u> gm
Wgt. Excess Dry Soil	<u>10.78</u> gm

Dimensions of Specimen		Specimen Diameter (in) or	
Initial (Lo)	Final (Ls)	Initial	Final
1 3.967	1-T 2.861		
2 3.965	2-m 2.869	*	
3 3.9615	3-B 2.872		
4 3.9685	1-T 2.861		
5 3.972	2-M 2.858	*	
Ave 3.9668	3-B 2.867	*	
$\Delta L_c =$ _____ in	Ave 2.8647		
$\Delta L_t =$ _____ in	$A_c = \pi D^2/4 = 6.445$ in <sup>2</sup>		
$\Sigma \Delta L =$ _____ in	$V_o = 1\text{ in}^3 \cdot 16.3871 = 418.967$ cm <sup>3</sup>		
$L_o - L_s =$ _____ in	$A_{sm} = 5.4542(D^2)^2 =$ _____ in <sup>-3</sup>		

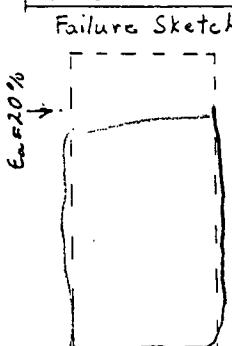
$D_{ave} = (D_t + 2D_m + D_c)/4$

Thickness = \_\_\_\_\_ in  
 Membrane Circumference (cm) = \_\_\_\_\_ in  
 Diam. (cm/π) = \_\_\_\_\_ in

Filter Paper: Top + bottom:  Yes;  No  
 Filter Strips:  Yes;  No  
 Vertical at 1/4" - Whatman #54 or  
 Spiral at 1/4" - Whatman #1 or

Wgt. top cap: \_\_\_\_\_ gm, \_\_\_\_\_ 10<sup>-2</sup> tons  
 Wgt. (cap, dial) = \_\_\_\_\_ gm, \_\_\_\_\_ 10<sup>-2</sup> tons

Preliminary  
 $Y_{co} = 131.48 \frac{1}{16/51^3} Y_{do} = 109.68 \frac{1}{16/51^3}$



Final Visual Classification:  See more detailed sketch on attached sheet;  Photo Taken.

SP-SM brown-gray stiff SWC ET-SOIL

Other Remarks: 17 200 SCREENS  $\bar{J}_c = 0.25655$ ,  
No Index Photo

Preliminary Cal. by DT Reviewed by J

Trimmed by \_\_\_\_\_ Set up by 10 Taken down by \_\_\_\_\_  
 Recalculated Date 1/3/84 Date 1/4/84

See back for Summary Calculations

# Permeability Test - Constant Head System

(See back of data sheet for equations, test constants, etc.)

L-504

(7/83)

Project No. 83C4366

Proj. Eng. PD

Pressure Head:  Mercury Manometer:  U-tube or  Vert Column in inch Hg

Col No. P-2

Apparatus No C-2

Reading In<sup>3</sup>:  Pressure Gage No. P6-3 in psi or \_\_\_\_\_

Flow Direction:  Up or  Down

Note: Manometer reading is differential between head & tail water

Test:  Water (Distilled or Demineralized or Tap)

pressure, while gage readings are not.

Fluid:  0.01N calcium sulfate or \_\_\_\_\_

with  $G_3 =$  \_\_\_\_\_

Run No.	Date Reading by	Temp °C	Time hr:min	$\Delta t$ (min)	$T_c$ (psig)	$U_b$ (psig)	Dial Reading (inch)	Head Readings (See Above)			Total Head Uncorrected (Correction) Corrected (cm)	Flow Reading (cm)	Flow Volume (cm <sup>3</sup> ) Rate (cm <sup>3</sup> /sec)	Permeability Preliminary Final @ 20°C (cm/sec)	$\Delta Q$ $\Sigma \Delta Q$ (cm <sup>3</sup> )	Tail Fluid Cont. No.	
								Pressure Head (cm)	Fluid Tail (cm)	Head (cm)							
1	8/4/84	21.5	8:57	48	93.47	90.0	579	S	-	-	59.0	43.2	16.05	3.9	64.1108	3.3768	
	1/14/84	"	9:46		"	"	"	E	-	-	59.0	42.7	(0.26)	7.0	- - -	$\times 10^{-4}$	- - -
	0	RT			$\bar{T}_c = 0.25$		A	-	-	59.0	42.95	15.79	3.1	$2.23 \times 10^{-2}$	3.36		
	0	= 0.965			ts for	change	H <sub>p</sub>		H <sub>s</sub> = 16.05			diff.		$\times 10^{-4}$			
1	1/14/84	"	9:46	50	"	"	S	-	-	59.0	42.7	16.30	7.0	43.43	2.1624		
	"	"	10:36		"	"	E	-	-	59.0	42.7	(0.16)	9.1	- - -	$\times 10^{-4}$	- - -	
2	0	RT			$\bar{T}_c = 0.25$		A	-	-	59.0	42.7	16.14	2.1	$1.45 \times 10^{-2}$	2.14		
2	"	= 0.965			ts for	change	H <sub>p</sub>		H <sub>s</sub> = 16.3			diff.		$\times 10^{-4}$			
1	"	"	10:36	66	"	"	S	-	-	59.0	42.7	16.30	9.1	45.4196	1.7161		
4	"	"	11:42		"	"	E	-	-	"	"	(0.14)	11.3	- - -	$\times 10^{-4}$	- - -	
2	-----	RT			$\bar{T}_c = 0.25$		A	-	-	"	"	16.16	2.2	$1.15 \times 10^{-2}$	1.69		
2	-----	= 0.965			ts for	change	H <sub>p</sub>		H <sub>s</sub> = 16.3			diff.		$\times 10^{-4}$			
1	"	"	11:52	43	"	"	S	-	-	59.0	42.7	16.30	11.3	19.61	1.0776		
1	"		12:37		"	"	E	-	-	"	"	(0.09)	12.2	- - -	$\times 10^{-4}$	- - -	
4	"	RT			$\bar{T}_c = 0.25$		A	-	-	"	"	16.21	0.9	$0.72 \times 10^{-2}$	1.06		
4	"	= 0.965			ts for	change	H <sub>p</sub>		H <sub>s</sub> = 16.3			diff.		$\times 10^{-4}$			

S=Start E=End A=Average Prelim. Test Constant = .004058

Remarks:  $h_C = 10.027$  cm  $A_C = 40.615$  cm<sup>2</sup>

Calculated by D & DT Reviewed by R

Ave k @ 20°C =  $2.06 \times 10^{-4}$

Sheet 1 of \_\_\_\_\_

TRIAXIAL TEST  
(Stage Back Pressuring/Consolidation)Project No. 83C4366 Cell No. P-2 Test No. Pen Tested By JPiston Screwed Into Top Cap :  Yes ;  No Piston Weights Used:  Yes ;  NoFlow Into Specimen For:  Increasing ;  Decreasing Burrett Reading

Stage No.	Date	Time	Elapsed Time (min)	Cell Pressure $\sigma_c$ tsf/psi	Back Pressure $U_b$ tsf/psi	Axial Load Div-lbs	Volume Change, CC			Vertical Dial (inch)
							Reading $\Delta v$	Reading $\Delta v$	Total Change	
1C	1/3/84	9:57	0	3.47			15.00			0.500
			0.5				6.40			.513
			1.0				6.35	(8.65)		.5135
			—				19.50			—
			2.0				18.10			.514
			15				17.80			.514
			19.05				(1.65)	17.85	(10.30)	.514 (0.014)
2B	1/3/84	11:07	0	3.47			6.00			.514
			11:15				10.65			.514
			11:45				13.35			.515
			12:05				16.50			.516
			12:23				18.25			.515
			12:39				19.41	(-13.41)		.516
			—				8.00			—
							9.10			.516
							9.80			.516
							10.85			.517
93.47	1/4/84	9:14		93.47			11.30			.519
			8:52				11.32			.519
							11.53			.519
							12.08			.519
							(-4.09)	11.09	(-17.50)	.519 (0.005)

Reviewed By J

Geraghty & Miller, Inc.

APPENDIX C

Sampling Protocols and Results  
of All Chemical Analyses

Geraghty & Miller, Inc.

GROUND-WATER QUALITY SAMPLING PROCEDURE

The following protocol was used to sample the monitoring wells at the UOP Inc.'s Plant site in East Rutherford, New Jersey and is based on accepted procedures that have been adopted by Geraghty & Miller, Inc. for use in hydrogeologic investigations.

1.0 Well Evacuation Procedures

- 1.1 Identify the well and record its designation.
- 1.2 Clean the top of the well with a clean rag.
- 1.3 Remove the well cap or plug, wipe the inside of the casing with a clean rag and place the cap down so as to keep it clean.
- 1.4 Clean the first five feet of the steel tape with distilled water and then measure the depth to water.
- 1.5 Compute the volume of water in 2-inch diameter well (0.162 gallons/feet) or 4-inch diameter well (0.652 gallons/feet).
- 1.6 Remove 5 times the volume of standing water in the well using a centrifugal pump or a submersible pump depending upon the static and pumping water levels.
  - 1.6.1 The intake opening of the pump line or pump impellers should be positioned and maintained just below the water surface in the well casing to ensure that the well is properly flushed. If there is a decrease in the well's water levels as a result of pumping, the intake line should be lowered as needed. This procedure does not

have to be followed for any wells which exhibit a low specific capacity indicated by rapid and pronounced drops in the water level, even to the point where the well is pumped dry.

- 1.6.2 If the well has been pumped or developed recently, the water level (that is, the volume of water in the casing) may not yet have recovered or returned to its normal state. This does not require a change in the evacuation procedures outlined above. Although the actual volume of water in the casing under such conditions is less than normally encountered, the removal of five times this volume is normally sufficient to provide samples for analysis that are representative of the water in the surrounding formation.
- 1.6.3 Although no single flushing protocol can cover all conditions, work performed by several researchers indicates that 4 to 10 volumes should be removed before sampling (Manual of Ground Water Sampling Procedures, NWWA/EPA Series, 1981).
- 1.6.4 If the well is pumped dry during this procedure and shows essentially complete recovery within 15 minutes, the removal of water should continue after each of the four additional recovery periods. If recovery is less than 75% during the 15 minutes after complete evacuation, sampling can begin with the next appearance of water. How-

ever, the initial volume which eventually becomes available may not be sufficient to complete the sampling in the brief period of time normally required.

## 2.0 Well Sampling Procedure

- 2.1 A peristaltic pump equipped with silicone tubing around the pinch rollers and polypropylene tubing for the intake and discharge lines should be used to collect samples whenever the water level in the well is less than 25 feet below land surface.
  - 2.1.1 Sample the well directly from the discharge line of the peristaltic pump immediately after the five volumes of water have been removed. The peristaltic pump does not aerate the sample, a problem encountered with bailers and centrifugal pumps.
  - 2.1.2 All tubing should be removed from the pump and discarded after each well has been sampled. This will minimize the possibilities of cross contamination between successive samples. The polypropylene and silicone tubing avoids contamination of samples with plasticizers, which can leach out of other materials such as Tygon tubing.
- 2.2 In the event that the depth(s) to water preclude the use of a peristaltic pump, a submersible pump should be used to purge the well and collect the sample(s).
  - 2.2.1 The pump and all associated tubing and support lines should be thoroughly cleaned prior to placing it in each

well. This can best be accomplished by making up a detergent solution in a new (clean) 55-gallon drum, submerging the pump and all lines in the drum and pumping the detergent solution out of the drum through the pump and discharge line. This should be followed by a similar "bath and flush" using water of potable quality.

2.3 Samples should be collected in one large amber glass bottle that is large enough to fill all of the individual sample containers. The large collection bottle should be thoroughly rinsed with dilute nitric acid, distilled water, and then rinsed with water from the well prior to the actual collection of the sample. Where two or more complete sets of samples are required, a larger collection bottle, capable of filling all sample containers, should be used. If one large bottle is not available, two collection bottles may be used. All sample containers should receive water in equal amounts from the two bottles to ensure sample uniformity.

2.3.1 If a well will not yield the volume of water necessary to immediately fill all of the sample containers, each container should be filled in succession as ground water enters the well. If exceptionally large volumes of water are required, the delays in obtaining adequate sample volume may render the analytical results meaningless. During the sampling of such wells, it is important that partially filled sample bottles be tightly capped, kept out of sunlight and cooled to 4°C.

2.4 Once samples have been collected they should be prepared and preserved in accordance with recommended procedures supplied by the analyzing laboratory.

2.4.1 It is important to note that all water samples designated for heavy metals analyses should be filtered through a 0.45 micron membrane filter prior to acidification. The membrane will clog readily, so prefiltration through paper and/or fiberglass will expedite the filtration process for samples with more than slight turbidity. (Acidification can displace metal ions adsorbed on particles in the sample that are not initially removed. The unfiltered sample, therefore, usually shows much higher metal concentrations; the higher value corresponds to "dissolved plus displacable" metal ion concentration.) This is done to ensure that only metal ions initially in solution will be measured.

Geraghty & Miller, Inc.

WELL EVACUATION AND SAMPLING EQUIPMENT

Field Book, pens, marking pens, labels.

Clean rags, disposable gloves (optional).

Steel tape, preferably graded in hundredths of a foot.

Chalk for tape.

Distilled water, plastic wash bottle.

Liquid detergent.

Peristaltic pumps and battery or generator.

Silicone tubing.

Polypropylene tubing.

Tools required for opening wells.

Filter paper.

Conical or Buchner funnels.

Vacuum pumps (may use peristaltic pump).

Side-arm flask.

Membrane filtration apparatus (Gelman magnetic).

47-mm, 0.45  $\mu\text{m}$ , pore-size membranes.

Fiberglass prefilters, 47 mm.

Pail (preferably graduated).

Ice chest and ice.

pH meter, electrode(s), standard buffer solutions, beakers, Conductivity bridge, conductivity cell.

Submersible pump (new 55-gallon drum)

Generator

**Geraghty & Miller, Inc.**

**SURFACE-WATER SAMPLING PROCEDURES**

**Materials**

Conductivity Meter	1 Gallon Narrow-Neck Sample Collection
pH Meter	Container (Glass)
Dissolved Oxygen Meter	Sample Bottles
Thermometer	Detergent/Potable Water/Distilled or
Cooler/Ice	Deionized Water
Portable Filtration Unit	Rubber Gloves/Waders
0.45 Micron Filters	

**Procedures:**

1. Record sampling station number.
2. Locate the point in the channel of highest water velocity and record this location (i.e., place a tape across the channel and measure the distance from the left bank looking upstream).
3. Measure the depth and surface velocity of water at this location.
4. Rinse the glass collection container three times with stream water.
5. Lower the collection container from the surface to the bottom of the stream at the location of greatest velocity so that filling occurs at all depths. The bottle movement should be done at a constant speed, wherever possible, to collect a uniformly composited (vertically) sample.
6. Transfer the sample to the pre-labeled sample bottles and then immediately store the samples at approximately 4° in a cooler. Samples for metal analyses must be filtered in the field prior to being placed in the acidified sample containers.
7. Measure and record the temperature, pH, specific conductance, and dissolved oxygen.
8. Clean the collection container thoroughly with detergent, potable water, and distilled deionized water.

Geraghty & Miller, Inc.

SEDIMENT SAMPLING PROCEDURE

Materials

Wide mouth glass jars (quart size)	24-inch long "A" rod (2)
Liquid detergent	Gloves, rubber
Lab brush	Waders
Screwdrivers (2)	Pipe wrenches (14 inches long, two required)
Sledge hammer	Tap water and distilled water
Steel tape	Tongue depressors, wooden
30-inch long split-spoon core barrel with retainer clip	

Procedure: Start sampling at furthest downstream station and work upstream. Sampling may require construction of a temporary platform across the creek channel at some or all locations.

1. Identify the sampling station location and record it.
2. Stretch the steel tape across the stream anchoring it on either side. Record the stream width.
3. Samples should be taken 6 inches from each bank and in the middle of the channel.
4. Collect the sample downstream of the steel tape by driving the core barrel 1.5 feet into the stream bottom. Record the depth of the water for each sample.
5. Recover the core barrel and remove the sample by sliding the contents into a wide mouth glass jar using a new wooden tongue depressor.
6. Identify the jar in terms of the designation the distance from left bank (looking upstream) where the sample was taken.
7. Place the sample on ice and out of direct sunlight.
8. Brush out the core tube with detergent and rinse it in tap water followed by distilled water.
9. Reassemble core tool and take the next sample.
10. At the conclusion of sample collection, describe the sediments found at the station.

**MSC**

**Measurement  
Sciences  
Corporation**

**WATER SAMPLES**

*January 3, 1984*

*Geraghty & Miller  
6800 Jericho Turnpike  
Syosset, New York 11791*

*Attention: E. Werth*

*Herewith 9 water samples analyzed for various parameters.*

*SAMPLE I.D.: #1 Well #6  
#2 Well #7I  
#3 Well #8  
#4 Well #9  
#5 Well #10*

*(continued on following page)*

<b>ANALYTICAL PARAMETERS</b>	<b>#1</b>	<b>#2</b>	<b>#3</b>	<b>#4</b>	<b>#5</b>
<i>Phenols as phenol, mg/L</i>	<i>1.2</i>	<i>0.064</i>	<i>0.002</i>	<i>0.004</i>	<i>0.031</i>
<i>Arsenic as As, mg/L</i>	<i>0.003</i>	<i>0.021</i>	<i>&lt;0.002</i>	<i>0.005</i>	<i>0.007</i>
<i>Chromium as Cr, mg/L</i>	<i>&lt;0.005</i>	<i>0.011</i>	<i>&lt;0.005</i>	<i>0.010</i>	<i>&lt;0.005</i>
<i>Cyanide as CN, mg/L</i>	<i>&lt;0.02</i>	<i>&lt;0.02</i>	<i>&lt;0.02</i>	<i>&lt;0.02</i>	<i>0.05</i>
<i>Lead as Pb, mg/L</i>	<i>0.013</i>	<i>0.040</i>	<i>0.060</i>	<i>0.011</i>	<i>0.028</i>
<i>Manganese as Mn, mg/L</i>	<i>0.72</i>	<i>0.67</i>	<i>0.50</i>	<i>1.5</i>	<i>4.3</i>
<i>Zinc as Zn, mg/L</i>	<i>0.02</i>	<i>0.04</i>	<i>0.02</i>	<i>0.04</i>	<i>0.03</i>
<i>Cadmium as Cd, mg/L</i>	<i>&lt;0.001</i>	<i>&lt;0.001</i>	<i>0.003</i>	<i>&lt;0.001</i>	<i>&lt;0.001</i>

*Additional results on following pages.*

**MSC PROJECT NO: 50842B**

# Measurement Sciences Corporation

Geraghty & Miller  
MSC PROJECT NO: 50842B

SAMPLE I.D.:	#1	Well #12
	#2	Well #13S
	#3	Well #13I
	#4	Well #17

ANALYTICAL PARAMETERS	#1	#2	#3	#4
Phenols as phenol, mg/L	0.004	<0.001	0.5	0.53
Arsenic as As, mg/L	<0.002	<0.002	0.022	0.029
Chromium as Cr, mg/L	<0.005	<0.005	0.013	0.006
Cyanide as CN, mg/L	<0.02	<0.02	<0.02	0.36
Lead as Pb, mg/L	0.012	0.044	0.048	0.080
Manganese as Mn, mg/L	0.47	1.6	0.70	27.
Zinc as Zn, mg/L	0.02	0.02	0.02	0.02
Cadmium as Cd, mg/L	0.003	<0.001	<0.001	0.002

# Measurement Sciences Corporation

**MSC**

January 3, 1984

*Geraghty & Miller*  
6800 Jericho Turnpike  
Syosset, NY 11791

Attention: E. Werth

5 water samples analyzed for various parameters.

Sample I.D.: #1 Well #4  
#2 Well #5  
#3 Well #2I  
#4 Well #11  
#5 Well #MW3

ANALYTICAL PARAMETERS	#1	#2	#3	#4	#5
Phenols as phenol, mg/L	0.005	0.019	0.17	0.24	0.12
Arsenic as As, mg/L	<0.002	0.003	<0.002	0.025	<0.002
Chromium as Cr, mg/L	<0.005	<0.005	0.005	<0.005	0.019
Cyanide as CN, mg/L	<0.02	<0.02	<0.02	0.24	<0.02
Lead as Pb, mg/L	0.028	0.028	0.076	0.052	0.044
Manganese as Mn, mg/L	1.4	2.9	0.50	1.5	2.2
Zinc as Zn, mg/L	<0.02	<0.02	0.02	0.03	0.03
Cadmium as Cd, mg/L	<0.001	<0.001	0.002	0.003	0.003

Additional results are on the following pages.

MSC PROJECT NO: 50842A

# Measurement Sciences Corporation

MSC

January 5, 1984

Geraghty & Miller  
6800 Jericho Turnpike  
Syosset, NY 11791

Attention: E. Werth

Attached herewith 15 samples for assorted parameters.

Page 1- Sample I.D. for five samples:

Sample #1- ST-1  
#2- ST-2  
#3- ST-3  
#4- ST-4  
#5- ST-5

ANALYTICAL PARAMETERS	#1	#2	#3	#4	#5
Phenols as phenol, mg/L	0.025	0.021	0.019	0.02	0.012
Arsenic as As, mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium as Cr, mg/L	<0.005	0.005	<0.005	0.012	<0.005
Cyanide as Cd, mg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Lead as Pb, mg/L	0.12	0.090	0.096	0.080	0.090
Manganese as Mn, mg/L	0.45	0.37	0.46	0.34	0.24
Zinc as Zn, mg/L	0.07	0.08	0.07	0.06	0.05
Cadmium as Cd, mg/L	0.004	0.008	0.004	0.002	0.014

Page 1 of 3

MSC PROJECT NO: 50842C

# Measurement Sciences Corporation

Geraghty & Miller (cont'd)

January 4, 1984

Five samples analyzed for various assorted parameters.

SAMPLE I.D.: Sample #1 ST-6  
#2 ST-7  
#3 Well #1  
#4 3D  
#5 7D

ANALYTICAL PARAMETERS	#1	#2	#3	#4	#5
Phenols as phenol, mg/L	0.013	0.016	0.001	<0.001	<0.001
Arsenic as As, mg/L	0.002	0.002	0.002	<0.002	<0.002
Chromium as Cr, mg/L	<0.005	<0.005	0.010	0.007	0.005
Cyanide as Cd, mg/L	<0.02	0.02	<0.02	<0.02	<0.02
Lead as Pb, mg/L	0.070	0.070	0.12	0.006	0.006
Manganese as Mn, mg/L	0.24	0.46	18.	0.02	0.07
Zinc as Zn, mg/L	0.05	0.07	0.02	<0.02	<0.02
Cadmium as Cd, mg/L	0.008	0.003	0.009	<0.001	<0.001

Page 2 of 3

MSC PROJECT NO: 50842C

# Measurement Sciences Corporation

Geraghty & Miller (cont'd)

January 4, 1984

Five samples analyzed for various assorted paramters.

SAMPLE I.D.: Sample #1 14D  
#2 3I  
#3 2S  
#4 3S  
#5 7S

ANALYTICAL PARAMETERS	#1	#2	#3	#4	#5
Phenols as phenol, mg/L	<0.001	0.05	0.001	0.004	0.003
Arsenic as As, mg/L	<0.002	0.006	----	----	----
Chromium as Cr, mg/L	<0.005	0.005	----	----	----
Cyanide as Cd, mg/L	<0.02	<0.02	----	----	----
Lead as Pb, mg/L	0.010	0.090	----	----	----
Manganese as Mn, mg/L	0.03	3.2	----	----	----
Zinc as Zn, mg/L	<0.02	<0.02	----	----	----
Cadmium as Cd, mg/L	<0.001	0.005	----	----	----

PAGE 3 of 3

MSC PROJECT NO: 50842C

# Measurement Sciences Corporation

**msc**

January 24, 1984

*Geraghty & Miller  
6800 Jericho Turnpike  
Syosset, New York 11791*

*Attention: E. Werth*

*1 water sample for various parameters.*

*Sample I.D. #1- Well 7S*

ANALYTICAL PARAMETERS

#1

Arsenic as As, mg/L	<0.002
Chromium as Cr, mg/L	0.008
Lead as Pb, mg/L	0.088
Manganese as Mn, mg/L	0.46
Zinc as Zn, mg/L	0.22
Cadmium as Cd, mg/L	0.006

*MSC PROJECT NO.: 50842-G*

# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-8  
CLIENT ID: WELL #1

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

*WMA*  
LAB NO.: 17284-8

CLIENT:

CLIENT I.D.: WELL #1

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	Pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>				
1B	acenaphthene	<10	66B	bis(2-ethylhexyl)phthalate	<10
5B	benzidine	<40	67B	butyl benzyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	68B	di-n-butyl phthalate	<10
9B	hexachlorobenzene	<10	69B	di-n-octyl phthalate	<10
12B	hexachloroethane	<10	70B	diethyl phthalate	18
18B	bis(2-chloroethyl)ether	<10	71B	dimethyl phthalate	<10
20B	2-chloronaphthalene	<10	72B	benzo(a)anthracene	<10
25B	1,2-dichlorobenzene	<10	73B	benzo(a)pyrene	<20
26B	1,3-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
27B	1,4-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
28B	3,3'-dichlorobenzene	<20	76B	chrysene	<20
35B	2,4-dinitrotoluene	<20	77B	acenaphthylene	<10
36B	2,6-dinitrotoluene	<20	78B	anthracene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	79B	benzo(ghi)perylene	<20
39B	fluoranthene	<10	80B	fluorene	<10
	<u>NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS</u>				
C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-13  
CLIENT ID: Well #2S

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	130
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17284-13  
CLIENT I.D.: #2S

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	5.4
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	9.8
			69B	di-n-octyl phthalate	<10
1B	acenaphthene	9.0	70B	diethyl phthalate	<10
5B	benzidine	<40	71B	dimethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	72B	benzo(a)anthracene	<10
9B	hexachlorobenzene	<10	73B	benzo(a)pyrene	<20
12B	hexachloroethane	<10	74B	3,4-benzofluoranthene	<20
18B	bis(2-chloroethyl)ether	<10	75B	benzo(k)fluoranthene	<20
20B	2-chloronaphthalene	<10	76B	chrysene	<20
25B	1,2-dichlorobenzene	<10	77B	acenaphthylene	30
26B	1,3-dichlorobenzene	<10	78B	anthracene	<10
27B	1,4-dichlorobenzene	<10	79B	benzo(ghi)perylene	<20
28B	3,3'-dichlorobenzene	<20	80B	fluorene	6.2
35B	2,4-dinitrotoluene	<20	81B	phenanthrene	<10
36B	2,6-dinitrotoluene	<20	82B	dibenzo(a,h)anthracene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	83B	indeno(1,2,3-cd)pyrene	<20
39B	fluoranthene	<10	84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	9.6	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

MM  
LAB NO: 17286-3

CLIENT:

CLIENT ID: Well #2I

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	320

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

17286-3

CLIENT:

Well # 2I

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	<10
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	10
1B	acenaphthene	<10	69B	di-n-octyl phthalate	<10
5B	benzidine	<40	70B	diethyl phthalate	2.1
8B	1,2,4-trichlorobenzene	<10	71B	dimethyl phthalate	<10
9B	hexachlorobenzene	<10	72B	benzo(a)anthracene	<10
12B	hexachloroethane	<10	73B	benzo(a)pyrene	<20
18B	bis(2-chloroethyl)ether	<10	74B	3,4-benzofluoranthene	<20
20B	2-chloronaphthalene	<10	75B	benzo(k)fluoranthene	<20
25B	1,2-dichlorobenzene	<10	76B	chrysene	<20
26B	1,3-dichlorobenzene	<10	77B	acenaphthylene	<10
27B	1,4-dichlorobenzene	<10	78B	anthracene	<10
28B	3,3'-dichlorobenzene	<20	79B	benzo(ghi)perylene	<20
35B	2,4-dinitrotoluene	<20	80B	fluorene	<10
36B	2,6-dinitrotoluene	<20	81B	phenanthrene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	82B	dibenzo(a,h)anthracene	<20
39B	fluoranthene	<10	83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	72	C12	4-nitroaniline	<100

# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-14  
CLIENT ID: Well #3S

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17284-14

CLIENT I.D.: #3S

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>				
1B	acenaphthene	<10	66B	bis(2-ethylhexyl)phthalate	<10
5B	benzidine	<40	67B	butyl benzyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	68B	di-n-butyl phthalate	<10
9B	hexachlorobenzene	<10	69B	di-n-octyl phthalate	<10
12B	hexachloroethane	<10	70B	diethyl phthalate	<10
18B	bis(2-chloroethyl)ether	<10	71B	dimethyl phthalate	<10
20B	2-chloronaphthalene	<10	72B	benzo(a)anthracene	<10
25B	1,2-dichlorobenzene	<10	73B	benzo(a)pyrene	<20
26B	1,3-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
27B	1,4-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
28B	3,3'-dichlorobenzene	<20	76B	chrysene	<20
35B	2,4-dinitrotoluene	<20	77B	acenaphthylene	<10
36B	2,6-dinitrotoluene	<20	78B	anthracene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	79B	benzo(ghi)perylene	<20
39B	fluoranthene	<10	80B	fluorene	<10
	<u>NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS</u>				
C1	benzoic acid	17	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-12  
CLIENT ID: WELL #3I

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	340
6V	carbon tetrachloride	<5
7V	chlorobenzene	29
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	12
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	4.5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbodisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	29

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

WMA  
LAB NO.: 17284-12  
CLIENT I.D.: WELL #31

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>				
1B	acenaphthene	<10	66B	bis(2-ethylhexyl)phthalate	<10
5B	benzidine	<40	67B	butyl benzyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	68B	di-n-butyl phthalate	<10
9B	hexachlorobenzene	<10	69B	di-n-octyl phthalate	<10
12B	hexachloroethane	<10	70B	diethyl phthalate	<10
18B	bis(2-chloroethyl)ether	130	71B	dimethyl phthalate	<10
20B	2-chloronaphthalene	<10	72B	benzo(a)anthracene	<10
25B	1,2-dichlorobenzene	<10	73B	benzo(a)pyrene	<20
26B	1,3-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
27B	1,4-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
28B	3,3'-dichlorobenzene	<20	76B	chrysene	<20
35B	2,4-dinitrotoluene	<20	77B	acenaphthylene	<10
36B	2,6-dinitrotoluene	<20	78B	anthracene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	79B	benzo(ghi)perylene	<20
39B	fluoranthene	<10	80B	fluorene	<10
	<u>NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS</u>				
C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-9  
CLIENT ID: WELL #3D

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	53
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	15
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17284-9  
CLIENT I.D.: WELL #3D

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>				
1B	acenaphthene	<10	66B	bis(2-ethylhexyl)phthalate	<10
5B	benzidine	<40	67B	butyl benzyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	68B	di-n-butyl phthalate	12
9B	hexachlorobenzene	<10	69B	di-n-octyl phthalate	<10
12B	hexachloroethane	<10	70B	diethyl phthalate	40
18B	bis(2-chloroethyl)ether	<10	71B	dimethyl phthalate	<10
20B	2-chloronaphthalene	<10	72B	benzo(a)anthracene	<10
25B	1,2-dichlorobenzene	<10	73B	benzo(a)pyrene	<20
26B	1,3-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
27B	1,4-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
28B	3,3'-dichlorobenzene	<20	76B	chrysene	<20
35B	2,4-dinitrotoluene	<20	77B	acenaphthylene	<10
36B	2,6-dinitrotoluene	<20	78B	anthracene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	79B	benzo(ghi)perylene	<20
39B	fluoranthene	<10	80B	fluorene	<10
	<u>NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS</u>				
C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17286-1  
CLIENT ID: Well # 4

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	53
6V	carbon tetrachloride	<5
7V	chlorobenzene	130
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	1.2
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	13
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	2.3
87V	trichloroethylene	<5
88V	vinyl chloride	14
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	3.1

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# Measurement Sciences Corporation

CLIENT:

LAB NO.: 17286-1  
CLIENT I.D.: Well # 4

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>		66B	bis(2-ethylhexyl)phthalate	<10
1B	acenaphthene	<10	67B	butyl benzyl phthalate	<10
5B	benzidine	<40	68B	di-n-butyl phthalate	13
8B	1,2,4-trichlorobenzene	<10	69B	di-n-octyl phthalate	<10
9B	hexachlorobenzene	<10	70B	diethyl phthalate	<10
12B	hexachloroethane	<10	71B	dimethyl phthalate	<10
18B	bis(2-chloroethyl)ether	11	72B	benzo(a)anthracene	<10
20B	2-chloronaphthalene	<10	73B	benzo(a)pyrene	<20
25B	1,2-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
26B	1,3-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
27B	1,4-dichlorobenzene	<10	76B	chrysene	<20
28B	3,3'-dichlorobenzene	<20	77B	acenaphthylene	<10
35B	2,4-dinitrotoluene	<20	78B	anthracene	<10
36B	2,6-dinitrotoluene	<20	79B	benzo(ghi)perylene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	80B	fluorene	<10
39B	fluoranthene	<10	81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	65
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17286-2  
CLIENT ID: Well # 5

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbonylsulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17286-2  
CLIENT I.D.: Well # 5

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>		66B	bis(2-ethylhexyl)phthalate	<10
1B	acenaphthene	<10	67B	butyl benzyl phthalate	<10
5B	benzidine	<40	68B	di-n-butyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	69B	di-n-octyl phthalate	<10
9B	hexachlorobenzene	<10	70B	diethyl phthalate	<10
12B	hexachloroethane	<10	71B	dimethyl phthalate	<10
18B	bis(2-chloroethyl)ether	<10	72B	benzo(a)anthracene	<10
20B	2-chloronaphthalene	<10	73B	benzo(a)pyrene	<20
25B	1,2-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
26B	1,3-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
27B	1,4-dichlorobenzene	<10	76B	chrysene	<20
28B	3,3'-dichlorobenzene	<20	77B	acenaphthylene	<10
35B	2,4-dinitrotoluene	<20	78B	anthracene	<10
36B	2,6-dinitrotoluene	<20	79B	benzo(ghi)perylene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	80B	fluorene	<10
39B	fluoranthene	<10	81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17285-1  
CLIENT ID: # 6

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	18000
6V	carbon tetrachloride	<5
7V	chlorobenzene	18
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	3800
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	820
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	11
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	11
87V	trichloroethylene	1000
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	26

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17285  
CLIENT I.D.: # 6

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	88	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	<10
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	9.1
			69B	di-n-octyl phthalate	<10
1B	acenaphthene	<10	70B	diethyl phthalate	<10
5B	benzidine	<40	71B	dimethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	72B	benzo(a)anthracene	<10
9B	hexachlorobenzene	<10	73B	benzo(a)pyrene	<20
12B	hexachloroethane	<10	74B	3,4-benzofluoranthene	<20
18B	bis(2-chloroethyl)ether	<10	75B	benzo(k)fluoranthene	<20
20B	2-chloronaphthalene	<10	76B	chrysene	<20
25B	1,2-dichlorobenzene	<10	77B	acenaphthylene	<10
26B	1,3-dichlorobenzene	<10	78B	anthracene	<10
27B	1,4-dichlorobenzene	<10	79B	benzo(ghi)perylene	<20
28B	3,3'-dichlorobenzene	<20	80B	fluorene	<10
35B	2,4-dinitrotoluene	<20	81B	phenanthrene	<10
36B	2,6-dinitrotoluene	<20	82B	dibenzo(a,h)anthracene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	83B	indeno(1,2,3-cd)pyrene	<20
39B	fluoranthene	<10	84B	pyrene	<10

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	14	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-15  
CLIENT ID: Well #7S

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	160
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	26
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	84
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

LAB NO.: 17284-15

CLIENT:

CLIENT I.D.: #7S

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	8.0
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	<10
1B	acenaphthene	<10	69B	di-n-octyl phthalate	<10
5B	benzidine	<40	70B	diethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	71B	dimethyl phthalate	<10
9B	hexachlorobenzene	<10	72B	benzo(a)anthracene	<10
12B	hexachloroethane	<10	73B	benzo(a)pyrene	<20
18B	bis(2-chloroethyl)ether	<10	74B	3,4-benzofluoranthene	<20
20B	2-chloronaphthalene	<10	75B	benzo(k)fluoranthene	<20
25B	1,2-dichlorobenzene	<10	76B	chrysene	<20
26B	1,3-dichlorobenzene	<10	77B	acenaphthylene	<10
27B	1,4-dichlorobenzene	<10	78B	anthracene	<10
28B	3,3'-dichlorobenzene	<20	79B	benzo(ghi)perylene	<20
35B	2,4-dinitrotoluene	<20	80B	fluorene	<10
36B	2,6-dinitrotoluene	<20	81B	phenanthrene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	82B	dibenzo(a,h)anthracene	<20
39B	fluoranthene	<10	83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

PLATTS  
LAB NO: 17285-2  
CLIENT: CLIENT ID: # 71

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	640
6V	carbon tetrachloride	<5
7V	chlorobenzene	110
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	42
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloroproppane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	15
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	90
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	70

# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17285  
CLIENT I.D.: #7I

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	6.6
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	8.2	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	36
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	18
			69B	di-n-octyl phthalate	<10
1B	acenaphthene	<10	70B	diethyl phthalate	<10
5B	benzidine	<40	71B	dimethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	72B	benzo(a)anthracene	<10
9B	hexachlorobenzene	<10	73B	benzo(a)pyrene	<20
12B	hexachloroethane	<10	74B	3,4-benzofluoranthene	<20
18B	bis(2-chloroethyl)ether	13	75B	benzo(k)fluoranthene	<20
20B	2-chloronaphthalene	<10	76B	chrysene	<20
25B	1,2-dichlorobenzene	<10	77B	acenaphthylene	<10
26B	1,3-dichlorobenzene	<10	78B	anthracene	<10
27B	1,4-dichlorobenzene	<10	79B	benzo(ghi)perylene	<20
28B	3,3'-dichlorobenzene	<20	80B	fluorene	<10
35B	2,4-dinitrotoluene	<20	81B	phenanthrene	<10
36B	2,6-dinitrotoluene	<20	82B	dibenzo(a,h)anthracene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	83B	indeno(1,2,3-cd)pyrene	<20
39B	fluoranthene	<10	84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	28	C8	dibenzofuran	<10
C3	4-methylphenol	24	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-10  
CLIENT ID: WELL #7D

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	3.8
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

LAB NO.: 17284-10

CLIENT I.D.: WELL #7D

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	<10
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	<10
			69B	di-n-octyl phthalate	<10
1B	acenaphthene	<10	70B	diethyl phthalate	<10
5B	benzidine	<40	71B	dimethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	72B	benzo(a)anthracene	<10
9B	hexachlorobenzene	<10	73B	benzo(a)pyrene	<20
12B	hexachloroethane	<10	74B	3,4-benzofluoranthene	<20
18B	bis(2-chloroethyl)ether	<10	75B	benzo(k)fluoranthene	<20
20B	2-chloronaphthalene	<10	76B	chrysene	<20
25B	1,2-dichlorobenzene	<10	77B	acenaphthylene	<10
26B	1,3-dichlorobenzene	<10	78B	anthracene	<10
27B	1,4-dichlorobenzene	<10	79B	benzo(ghi)perylene	<20
28B	3,3'-dichlorobenzene	<20	80B	fluorene	<10
35B	2,4-dinitrotoluene	<20	81B	phenanthrene	<10
36B	2,6-dinitrotoluene	<20	82B	dibenzo(a,h)anthracene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	83B	indeno(1,2,3-cd)pyrene	<20
39B	fluoranthene	<10	84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

LAB NO: 17285-3  
CLIENT: : CLIENT ID: # 8

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

LAB NO.: 17285-3

CLIENT I.D.: #8

CLIENT:

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	<10
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	<10
1B	acenaphthene	<10	69B	di-n-octyl phthalate	<10
5B	benzidine	<40	70B	diethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	71B	dimethyl phthalate	<10
9B	hexachlorobenzene	<10	72B	benzo(a)anthracene	<10
12B	hexachloroethane	<10	73B	benzo(a)pyrene	<20
18B	bis(2-chloroethyl)ether	<10	74B	3,4-benzofluoranthene	<20
20B	2-chloronaphthalene	<10	75B	benzo(k)fluoranthene	<20
25B	1,2-dichlorobenzene	<10	76B	chrysene	<20
26B	1,3-dichlorobenzene	<10	77B	acenaphthylene	<10
27B	1,4-dichlorobenzene	<10	78B	anthracene	<10
28B	3'-dichlorobenzene	<20	79B	benzo(ghi)perylene	<20
35B	2,4-dinitrotoluene	<20	80B	fluorene	<10
36B	2,6-dinitrotoluene	<20	81B	phenanthrene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	82B	dibenzo(a,h)anthracene	<20
39B	fluoranthene	<10	83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17285-4  
CLIENT ID: # 9

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	v vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

LAB NO.: 17285-4

CLIENT:

CLIENT I.D.: #9

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	<10
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	<10
			69B	di-n-octyl phthalate	<10
1B	acenaphthene	<10	70B	diethyl phthalate	<10
5B	benzidine	<40	71B	dimethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	72B	benzo(a)anthracene	<10
9B	hexachlorobenzene	<10	73B	benzo(a)pyrene	<20
12B	hexachloroethane	<10	74B	3,4-benzofluoranthene	<20
18B	bis(2-chloroethyl)ether	<10	75B	benzo(k)fluoranthene	<20
20B	2-chloronaphthalene	<10	76B	chrysene	<20
25B	1,2-dichlorobenzene	<10	77B	acenaphthylene	<10
26B	1,3-dichlorobenzene	<10	78B	anthracene	<10
27B	1,4-dichlorobenzene	<10	79B	benzo(ghi)perylene	<20
28B	3,3'-dichlorobenzene	<20	80B	fluorene	<10
35B	2,4-dinitrotoluene	<20	81B	phenanthrene	<10
36B	2,6-dinitrotoluene	<20	82B	dibenzo(a,h)anthracene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	83B	indeno(1,2,3-cd)pyrene	<20
39B	fluoranthene	<10	84B	pyrene	<10

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17285-5  
CLIENT ID: # 10

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	46
6V	carbon tetrachloride	<5
7V	chlorobenzene	10
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	41
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	54
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	21
87V	trichloroethylene	1.1
88V	vinyl chloride	340
C13	acetone	<5
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	76

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

WMA  
LAB NO.: 17285-5

CLIENT: CLIENT I.D.: #10

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	<10
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	<10
1B	acenaphthene	<10	69B	di-n-octyl phthalate	<10
5B	benzidine	<40	70B	diethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	71B	dimethyl phthalate	<10
9B	hexachlorobenzene	<10	72B	benzo(a)anthracene	<10
12B	hexachloroethane	<10	73B	benzo(a)pyrene	<20
18B	bis(2-chloroethyl)ether	<10	74B	3,4-benzofluoranthene	<20
20B	2-chloronaphthalene	<10	75B	benzo(k)fluoranthene	<20
25B	1,2-dichlorobenzene	<10	76B	chrysene	<20
26B	1,3-dichlorobenzene	<10	77B	acenaphthylene	<10
27B	1,4-dichlorobenzene	<10	78B	anthracene	<10
28B	3,3'-dichlorobenzene	<20	79B	benzo(ghi)perylene	<20
35B	2,4-dinitrotoluene	<20	80B	fluorene	<10
36B	2,6-dinitrotoluene	<20	81B	phenanthrene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	82B	dibenzo(a,h)anthracene	<20
39B	fluoranthene	<10	83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17286-4  
CLIENT ID: Well #11

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	600
6V	carbon tetrachloride	<5
7V	chlorobenzene	65
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	180
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbodisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

**CLIENT:**

*[Signature]*  
LAB NO.: 17286-4  
CLIENT I.D.: Well # 11

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	<10
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	<10
			69B	di-n-octyl phthalate	<10
			70B	diethyl phthalate	<10
			71B	dimethyl phthalate	<10
			72B	benzo(a)anthracene	<10
			73B	benzo(a)pyrene	<20
			74B	3,4-benzofluoranthene	<20
			75B	benzo(k)fluoranthene	<20
			76B	chrysene	<20
			77B	acenaphthylene	<10
			78B	anthracene	<10
			79B	benzo(ghi)perylene	<20
			80B	fluorene	<10
			81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	15	C8	dibenzofuran	<10
C3	4-methylphenol	230	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17285-6  
CLIENT ID: # 12 (REPLICATE OF 8)

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17285-6  
CLIENT I.D.: #12 (REPLICATE OF 8)

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	<10
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	<10
1B	acenaphthene	<10	69B	di-n-octyl phthalate	<10
5B	benzidine	<40	70B	diethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	71B	dimethyl phthalate	<10
9B	hexachlorobenzene	<10	72B	benzo(a)anthracene	<10
12B	hexachloroethane	<10	73B	benzo(a)pyrene	<20
18B	bis(2-chloroethyl)ether	<10	74B	3,4-benzofluoranthene	<20
20B	2-chloronaphthalene	<10	75B	benzo(k)fluoranthene	<20
25B	1,2-dichlorobenzene	<10	76B	chrysene	<20
26B	1,3-dichlorobenzene	<10	77B	acenaphthylene	<10
27B	1,4-dichlorobenzene	<10	78B	anthracene	<10
28B	3,3'-dichlorobenzene	<20	79B	benzo(ghi)perylene	<20
35B	2,4-dinitrotoluene	<20	80B	fluorene	<10
36B	2,6-dinitrotoluene	<20	81B	phenanthrene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	82B	dibenzo(a,h)anthracene	<20
39B	fluoranthene	<10	83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17285-7  
CLIENT ID: # 13S (REPLICATE OF 9)

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17285-7  
CLIENT I.D.: #13S (REPLICATE OF 9)

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
<u>BASE/NEUTRAL COMPOUNDS</u>					
1B	acenaphthene	<10	66B	bis(2-ethylhexyl)phthalate	<10
5B	benzidine	<40	67B	butyl benzyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	68B	di-n-butyl phthalate	<10
9B	hexachlorobenzene	<10	69B	di-n-octyl phthalate	<10
12B	hexachloroethane	<10	70B	diethyl phthalate	<10
18B	bis(2-chloroethyl)ether	<10	71B	dimethyl phthalate	<10
20B	2-chloronaphthalene	<10	72B	benzo(a)anthracene	<10
25B	1,2-dichlorobenzene	<10	73B	benzo(a)pyrene	<20
26B	1,3-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
27B	1,4-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
28B	3,3'-dichlorobenzene	<20	76B	chrysene	<20
35B	2,4-dinitrotoluene	<20	77B	acenaphthylene	<10
36B	2,6-dinitrotoluene	<20	78B	anthracene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	79B	benzo(ghi)perylene	<20
39B	fluoranthene	<10	80B	fluorene	<10
			81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17285-10  
CLIENT ID: 131 (REPLICATE OF 71)

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	14
6V	carbon tetrachloride	<5
7V	chlorobenzene	130
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	12
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	19

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17285-8  
CLIENT I.D.: #13I (REPLICATE OF 71)

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	8.3
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
<u>BASE/NEUTRAL COMPOUNDS</u>					
1B	acenaphthene	<10	69B	di-n-octyl phthalate	<10
5B	benzidine	<40	70B	diethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	71B	dimethyl phthalate	<10
9B	hexachlorobenzene	<10	72B	benzo(a)anthracene	<10
12B	hexachloroethane	<10	73B	benzo(a)pyrene	<20
18B	bis(2-chloroethyl)ether	<10	74B	3,4-benzofluoranthene	<20
20B	2-chloronaphthalene	<10	75B	benzo(k)fluoranthene	<20
25B	1,2-dichlorobenzene	<10	76B	chrysene	<20
26B	1,3-dichlorobenzene	<10	77B	acenaphthylene	<10
27B	1,4-dichlorobenzene	<10	78B	anthracene	<10
28B	3,3'-dichlorobenzene	<20	79B	benzo(ghi)perylene	<20
35B	2,4-dinitrotoluene	<20	80B	fluorene	<10
36B	2,6-dinitrotoluene	<20	81B	phenanthrene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	82B	dibenzo(a,h)anthracene	<20
39B	fluoranthene	<10	83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-11  
CLIENT ID: WELL #14D

(REPLICATE OF 3D)

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	48
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	14
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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Samples not destroyed in testing are retained a maximum of thirty (30) days unless otherwise requested.

# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17284-11  
CLIENT I.D.: WELL #14D (REPLICATE OF 3D)

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>		66B	bis(2-ethylhexyl)phthalate	<10
1B	acenaphthene	<10	67B	butyl benzyl phthalate	<10
5B	benzidine	<40	68B	di-n-butyl phthalate	10
8B	1,2,4-trichlorobenzene	<10	69B	di-n-octyl phthalate	<10
9B	hexachlorobenzene	<10	70B	diethyl phthalate	<10
12B	hexachloroethane	<10	71B	dimethyl phthalate	<10
18B	bis(2-chloroethyl)ether	<10	72B	benzo(a)anthracene	<10
20B	2-chloronaphthalene	<10	73B	benzo(a)pyrene	<20
25B	1,2-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
26B	1,3-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
27B	1,4-dichlorobenzene	<10	76B	chrysene	<20
28B	3,3'-dichlorobenzene	<20	77B	acenaphthylene	<10
35B	2,4-dinitrotoluene	<20	78B	anthracene	<10
36B	2,6-dinitrotoluene	<20	79B	benzo(ghi)perylene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	80B	fluorene	<10
39B	fluoranthene	<10	81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

MOM

CLIENT:

LAB NO: 17286-5  
CLIENT ID: # MW 3

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	2.0
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17286-5  
CLIENT I.D.: MW #3

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	<10
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	<10
			69B	di-n-octyl phthalate	<10
1B	acenaphthene	<10	70B	diethyl phthalate	<10
5B	benzidine	<40	71B	dimethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	72B	benzo(a)anthracene	<10
9B	hexachlorobenzene	<10	73B	benzo(a)pyrene	<20
12B	hexachloroethane	<10	74B	3,4-benzofluoranthene	<20
18B	bis(2-chloroethyl)ether	<10	75B	benzo(k)fluoranthene	<20
20B	2-chloronaphthalene	<10	76B	chrysene	<20
25B	1,2-dichlorobenzene	<10	77B	acenaphthylene	<10
26B	1,3-dichlorobenzene	<10	78B	anthracene	<10
27B	1,4-dichlorobenzene	<10	79B	benzo(ghi)perylene	<20
28B	3,3'-dichlorobenzene	<20	80B	fluorene	<10
35B	2,4-dinitrotoluene	<20	81B	phenanthrene	<10
36B	2,6-dinitrotoluene	<20	82B	dibenzo(a,h)anthracene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	83B	indeno(1,2,3-cd)pyrene	<20
39B	fluoranthene	<10	84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	12	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17285-9  
CLIENT ID: # 17 (MW17)

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	92
6V	carbon tetrachloride	<5
7V	chlorobenzene	100
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	330
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	10
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	4.2
86V	toluene	160
87V	trichloroethylene	15
88V	vinyl chloride	120
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	4.1
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	210

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-1  
CLIENT ID: ST-1

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

*[Signature]*

CLIENT:

LAB NO.: 17284-1  
CLIENT I.D.: ST-1

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	8.0
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	<10
1B	acenaphthene	<10	69B	di-n-octyl phthalate	<10
5B	benzidine	<40	70B	diethyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	71B	dimethyl phthalate	<10
9B	hexachlorobenzene	<10	72B	benzo(a)anthracene	<10
12B	hexachloroethane	<10	73B	benzo(a)pyrene	<20
18B	bis(2-chloroethyl)ether	<10	74B	3,4-benzofluoranthene	<20
20B	2-chloronaphthalene	<10	75B	benzo(k)fluoranthene	<20
25B	1,2-dichlorobenzene	8.0	76B	chrysene	<20
26B	1,3-dichlorobenzene	<10	77B	acenaphthylene	<10
27B	1,4-dichlorobenzene	<10	78B	anthracene	<10
28B	3,3'-dichlorobenzene	<20	79B	benzo(ghi)perylene	<20
35B	2,4-dinitrotoluene	<20	80B	fluorene	<10
36B	2,6-dinitrotoluene	<20	81B	phenanthrene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	82B	dibenzo(a,h)anthracene	<20
39B	fluoranthene	<10	83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-2  
CLIENT ID: ST-2

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17284-2  
CLIENT I.D.: ST-2

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>				
1B	acenaphthene	<10	66B	bis(2-ethylhexyl)phthalate	<10
5B	benzidine	<40	67B	butyl benzyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	68B	di-n-butyl phthalate	<10
9B	hexachlorobenzene	<10	69B	di-n-octyl phthalate	<10
12B	hexachloroethane	<10	70B	diethyl phthalate	<10
18B	bis(2-chloroethyl)ether	<10	71B	dimethyl phthalate	<10
20B	2-chloronaphthalene	<10	72B	benzo(a)anthracene	<10
25B	1,2-dichlorobenzene	<10	73B	benzo(a)pyrene	<20
26B	1,3-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
27B	1,4-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
28B	3,3'-dichlorobenzene	<20	76B	chrysene	<20
35B	2,4-dinitrotoluene	<20	77B	acenaphthylene	<10
36B	2,6-dinitrotoluene	<20	78B	anthracene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	79B	benzo(ghi)perylene	<20
39B	fluoranthene	<10	80B	fluorene	<10
			81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-3  
CLIENT ID: ST-3

PP# VOLATILES ug/L

2V acrolein	<100
3V acrylonitrile	<100
4V benzene	<5
6V carbon tetrachloride	<5
7V chlorobenzene	<5
10V 1,2-dichloroethane	<5
11V 1,1,1-trichloroethane	<5
13V 1,1,-dichloroethane	<5
14V 1,1,2-trichloroethane	<5
15V 1,1,2,2-tetrachloroethane	<10
16V chloroethane	<10
19V 2-chloroethylvinyl ether	<10
23V chloroform	<5
29V 1,1-dichloroethylene	<5
30V 1,2-trans-dichloroethylene	<5
32V 1,2-dichloropropane	<10
33V 1,3-dichloropropylene	<5
38V ethylbenzene	<5
44V methylene chloride	<5
45V methyl chloride	<10
46V methyl bromide	<10
47V bromoform	<10
48V dichlorobromomethane	<5
49V trichlorofluoromethane	<10
50V dichlorodifluoromethane	<10
51V chlorodibromomethane	<5
85V tetrachloroethylene	<5
86V toluene	<5
87V trichloroethylene	<5
88V vinyl chloride	<10
C13 acetone	<5
C14 2-butanone	<5
C15 carbondisulfide	<5
C16 2-hexanone	<5
C17 4-methyl-2-pentanone	<5
C18 styrene	<5
C19 vinyl acetate	<5
C20 total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

W.W.H.  
LAB NO.: 17284-3  
CLIENT I.D.: ST-3

CLIENT:

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>		66B	bis(2-ethylhexyl)phthalate	<10
1B	acenaphthene	<10	67B	butyl benzyl phthalate	<10
5B	benzidine	<40	68B	di-n-butyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	69B	di-n-octyl phthalate	<10
9B	hexachlorobenzene	<10	70B	diethyl phthalate	<10
12B	hexachloroethane	<10	71B	dimethyl phthalate	<10
18B	bis(2-chloroethyl)ether	<10	72B	benzo(a)anthracene	<10
20B	2-chloronaphthalene	<10	73B	benzo(a)pyrene	<20
25B	1,2-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
26B	1,3-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
27B	1,4-dichlorobenzene	<10	76B	chrysene	<20
28B	3,3'-dichlorobenzene	<20	77B	acenaphthylene	<10
35B	2,4-dinitrotoluene	<20	78B	anthracene	<10
36B	2,6-dinitrotoluene	<20	79B	benzo(ghi)perylene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	80B	fluorene	<10
39B	fluoranthene	<10	81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-4  
CLIENT ID: ST-4

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17284-4

CLIENT I.D.: ST-4

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
<u>BASE/NEUTRAL COMPOUNDS</u>					
1B	acenaphthene	<10	66B	bis(2-ethylhexyl)phthalate	<10
5B	benzidine	<40	67B	butyl benzyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	68B	di-n-butyl phthalate	<10
9B	hexachlorobenzene	<10	69B	di-n-octyl phthalate	<10
12B	hexachloroethane	<10	70B	diethyl phthalate	<10
18B	bis(2-chloroethyl)ether	<10	71B	dimethyl phthalate	<10
20B	2-chloronaphthalene	<10	72B	benzo(a)anthracene	<10
25B	1,2-dichlorobenzene	<10	73B	benzo(a)pyrene	<20
26B	1,3-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
27B	1,4-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
28B	3,3'-dichlorobenzene	<20	76B	chrysene	<20
35B	2,4-dinitrotoluene	<20	77B	acenaphthylene	<10
36B	2,6-dinitrotoluene	<20	78B	anthracene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	79B	benzo(ghi)perylene	<20
39B	fluoranthene	<10	80B	fluorene	<10
			81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-5  
CLIENT ID: ST-5

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbodisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

WMA  
LAB NO.: 17284-5

CLIENT:

CLIENT I.D.: ST-5

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>				
1B	acenaphthene	<10	66B	bis(2-ethylhexyl)phthalate	<10
5B	benzidine	<40	67B	butyl benzyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	68B	di-n-butyl phthalate	<10
9B	hexachlorobenzene	<10	69B	di-n-octyl phthalate	<10
12B	hexachloroethane	<10	70B	diethyl phthalate	<10
18B	bis(2-chloroethyl)ether	<10	71B	dimethyl phthalate	<10
20B	2-chloronaphthalene	<10	72B	benzo(a)anthracene	<10
25B	1,2-dichlorobenzene	<10	73B	benzo(a)pyrene	<20
26B	1,3-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
27B	1,4-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
28B	3,3'-dichlorobenzene	<20	76B	chrysene	<20
35B	2,4-dinitrotoluene	<20	77B	acenaphthylene	<10
36B	2,6-dinitrotoluene	<20	78B	anthracene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	79B	benzo(ghi)perylene	<20
39B	fluoranthene	<10	80B	fluorene	<10
	<u>NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS</u>				
C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

LAB NO: 17284-6

CLIENT:

CLIENT ID: ST-6

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloroproppane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	470
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17284-6  
CLIENT I.D.: ST-6

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
	<u>BASE/NEUTRAL COMPOUNDS</u>		66B	bis(2-ethylhexyl)phthalate	<10
1B	acenaphthene	<10	67B	butyl benzyl phthalate	<10
5B	benzidine	<40	68B	di-n-butyl phthalate	<10
8B	1,2,4-trichlorobenzene	<10	69B	di-n-octyl phthalate	<10
9B	hexachlorobenzene	<10	70B	diethyl phthalate	<10
12B	hexachloroethane	<10	71B	dimethyl phthalate	<10
18B	bis(2-chloroethyl)ether	<10	72B	benzo(a)anthracene	<10
20B	2-chloronaphthalene	<10	73B	benzo(a)pyrene	<20
25B	1,2-dichlorobenzene	<10	74B	3,4-benzofluoranthene	<20
26B	1,3-dichlorobenzene	<10	75B	benzo(k)fluoranthene	<20
27B	1,4-dichlorobenzene	<10	76B	chrysene	<20
28B	3,3'-dichlorobenzene	<20	77B	acenaphthylene	<10
35B	2,4-dinitrotoluene	<20	78B	anthracene	<10
36B	2,6-dinitrotoluene	<20	79B	benzo(ghi)perylene	<20
37B	1,2-diphenylhydrazine (as azobenzene)	<20	80B	fluorene	<10
39B	fluoranthene	<10	81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

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Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-7  
CLIENT ID: ST-7

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

17284-7

CLIENT:

ST-7

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	<10
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
			66B	bis(2-ethylhexyl)phthalate	<10
			67B	butyl benzyl phthalate	<10
			68B	di-n-butyl phthalate	<10
			69B	di-n-octyl phthalate	<10
			70B	diethyl phthalate	<10
			71B	dimethyl phthalate	<10
			72B	benzo(a)anthracene	<10
			73B	benzo(a)pyrene	<20
			74B	3,4-benzofluoranthene	<20
			75B	benzo(k)fluoranthene	<20
			76B	chrysene	<20
			77B	acenaphthylene	<10
			78B	anthracene	<10
			79B	benzo(ghi)perylene	<20
			80B	fluorene	<10
			81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	<20	C12	4-nitroaniline	<100

This report is for the sole and exclusive use of the client to whom it is addressed.  
Samples not destroyed in testing are retained a maximum of thirty (30) days unless otherwise requested.

Measurement  
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MSC

SEDIMENT SAMPLES

January 3, 1984

Geraghty & Miller  
6800 Jericho Turnpike  
Syosset, NY 11791

Attention: E. Werth

5 sediment samples analyzed for the following parameters:

Phenols	Manganese
Arsenic	Zinc
Chromium	Cadmium
Cyanide	Base Neutrals
Lead	

SAMPLE I.D.:

#1	Well #1C
#2	Well #2C
#3	Well #3C
#4	Well #4C
#5	Well #5C

	SS1	SS2	SS3	SS4	SS5
--	-----	-----	-----	-----	-----

ANALYTICAL PARAMETERS	#1	#2	#3	#4	#5
Phenols as phenol, mg/Kg	17	1.6	0.8	0.9	0.1
Arsenic as As, mg/Kg	12.	20.	1.9	4.4	1.8
Chromium as Cr, mg/Kg	660	4000	160	130	7.8
Cyanide as CN, mg/Kg	5.9	11	<0.3	<0.3	<0.3
Lead as Pb, mg/Kg	88	80	25	25	3.8
Manganese as Mn, mg/Kg	3200	1600	360	110	10
Zinc as Zn, mg/Kg	300	580	145	53	20
Cadmium as Cd, mg/Kg	0.64	2.4	1.3	0.20	0.088

Base neutral results are on the following pages.

MSC PROJECT NO: 50841

**Measurement Sciences Corporation**

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Enclosed are the GC/MS results for the five sediment samples we received for base-neutral priority pollutant analysis.

The samples were soxhlet extracted and analyzed by EPA Method 625 using a 30 meter DB-5 capillary column. The results are given on the enclosed data summary sheets. The variation in detection limits is due to the dilutions which were needed on some of the samples due to the high level of organics present.

Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

**SS1**

CLIENT:

LAB NO. 17274-1B  
CLIENT I.D.: 1C

ACID COMPOUNDS

ug/g

2,4,6-trichlorophenol	<u>      </u>
p-chloro-m-cresol	<u>      </u>
2-chlorophenol	<u>      </u>
2,4-dichlorophenol	<u>      </u>
2,4-dimethylphenol	<u>      </u>
2-nitrophenol	<u>      </u>
4-nitrophenol	<u>      </u>
2,4-dinitrophenol	<u>      </u>
4,6-dinitro-o-cresol	<u>      </u>
pentachlorophenol	<u>      </u>
phenol	<u>      </u>

BASE/NEUTRAL COMPOUNDS

acenaphthene	<u>ND</u>
benzidine	<u>ND</u>
1,2,4-trichlorobenzene	<u>25</u>
hexachlorobenzene	<u>ND</u>
hexachloroethane	<u>ND</u>
bis(2-chloroethyl)ether	<u>ND</u>
2-chloronaphthalene	<u>ND</u>
1,2-dichlorobenzene	<u>38</u>
1,3-dichlorobenzene	<u>14</u>
1,4-dichlorobenzene	<u>29</u>
3,3'-dichlorobenzene	<u>ND</u>
2,4-dinitrotoluene	<u>ND</u>
2,6-dinitrotoluene	<u>ND</u>
1,2-diphenylhydrazine (as azobenzene)	<u>ND</u>
fluoranthene	<u>ND</u>
4-chlorophenyl phenyl ether	<u>ND</u>

BASE/NEUTRAL COMPOUNDS

ug/g

4-bromophenyl phenyl ether	<u>ND</u>
bis(2-chloroisopropyl)ether	<u>      </u>
bis(2-chloroethoxy)methane	<u>      </u>
hexachlorobutadiene	<u>      </u>
hexachlorocyclopentadiene	<u>      </u>
isophorone	<u>      </u>
naphthalene	<u>      </u>
nitrobenzene	<u>      </u>
N-nitrosodimethylamine	<u>      </u>
N-nitrosodiphenylamine	<u>      </u>
N-nitrosodi-n-propylamine	<u>      </u>
bis(2-ethylhexyl)phthalate	<u>      </u>
butyl benzyl phthalate	<u>      </u>
di-n-butyl phthalate	<u>      </u>
di-n-octyl phthalate	<u>      </u>
diethyl phthalate	<u>      </u>
dimethyl phthalate	<u>      </u>
benzo(a)anthracene	<u>      </u>
benzo(a)pyrene	<u>      </u>
3,4-benzofluoranthene	<u>      </u>
benzo(k)fluoranthene	<u>      </u>
chrysene	<u>      </u>
acenaphthylene	<u>      </u>
anthracene	<u>      </u>
benzo(ghi)perylene	<u>      </u>
fluorene	<u>      </u>
phenanthrene	<u>      </u>
dibenzo(a,h)anthracene	<u>      </u>
indeno(1,2,3-cd)pyrene	<u>✓</u>
pyrene	<u>ND</u>

*ND = NOT DETECTED*

*DETECTION LIMIT = 20 ug/g*

# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

**SS2**

LAB NO. 17277-2B

CLIENT I.D.: 2C

### ACID COMPOUNDS

ug/g

2,4,6-trichlorophenol	<u>      </u>
p-chloro-m-cresol	<u>      </u>
2-chlorophenol	<u>      </u>
2,4-dichlorophenol	<u>      </u>
2,4-dimethylphenol	<u>      </u>
2-nitrophenol	<u>      </u>
4-nitrophenol	<u>      </u>
2,4-dinitrophenol	<u>      </u>
4,6-dinitro-o-cresol	<u>      </u>
pentachlorophenol	<u>      </u>
phenol	<u>      </u>

### BASE/NEUTRAL COMPOUNDS

acenaphthene	<u>ND</u>
benzidine	<u>      </u>
1,2,4-trichlorobenzene	<u>      </u>
hexachlorobenzene	<u>      </u>
hexachloroethane	<u>      </u>
bis(2-chloroethyl)ether	<u>✓</u>
2-chloronaphthalene	<u>ND</u>
1,2-dichlorobenzene	<u>0.4</u>
1,3-dichlorobenzene	<u>ND</u>
1,4-dichlorobenzene	<u>      </u>
3,3'-dichlorobenzene	<u>      </u>
2,4-dinitrotoluene	<u>      </u>
2,6-dinitrotoluene	<u>      </u>
1,2-diphenylhydrazine (as azobenzene)	<u>ND</u>
fluoranthene	<u>1.0</u>
4-chlorophenyl phenyl ether	<u>ND</u>

### BASE/NEUTRAL COMPOUNDS

ug/g

4-bromophenyl phenyl ether	<u>ND</u>
bis(2-chloroisopropyl)ether	<u>      </u>
bis(2-chloroethoxy)methane	<u>      </u>
hexachlorobutadiene	<u>      </u>
hexachlorocyclopentadiene	<u>      </u>
isophorone	<u>      </u>
naphthalene	<u>      </u>
nitrobenzene	<u>✓</u>
N-nitrosodimethylamine	<u>ND</u>
N-nitrosodiphenylamine	<u>2.0</u>
N-nitrosodi-n-propylamine	<u>ND</u>
bis(2-ethylhexyl)phthalate	<u>10</u>
butyl benzyl phthalate	<u>ND</u>
di-n-butyl phthalate	<u>      </u>
di-n-octyl phthalate	<u>      </u>
diethyl phthalate	<u>✓</u>
dimethyl phthalate	<u>ND</u>
benzo(a)anthracene	<u>0.6</u>
benzo(a)pyrene	<u>0.5</u>
3,4-benzofluoranthene	<u>0.7</u>
benzo(k)fluoranthene	<u>0.7</u>
chrysene	<u>0.6</u>
acenaphthylene	<u>ND</u>
anthracene	<u>0.6</u>
benzo(ghi)perylene	<u>ND</u>
fluorene	<u>ND</u>
phenanthrene	<u>0.6</u>
dibenzo(a,h)anthracene	<u>ND</u>
indeno(1,2,3-cd)pyrene	<u>ND</u>
pyrene	<u>1.1</u>

ND = NOT DETECTED

DETECTION LIMIT = 0.50 ug/g

Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

**SS-3**

CLIENT:

LAB NO. 17277-3B  
CLIENT I.D.: 3C

ACID COMPOUNDS

ug/g

2,4,6-trichlorophenol	_____
p-chloro-m-cresol	_____
2-chlorophenol	_____
2,4-dichlorophenol	_____
2,4-dimethylphenol	_____
2-nitrophenol	_____
4-nitrophenol	_____
2,4-dinitrophenol	_____
4,6-dinitro-o-cresol	_____
pentachlorophenol	_____
phenol	_____

BASE/NEUTRAL COMPOUNDS

ND

acenaphthene	_____
benzidine	_____
1,2,4-trichlorobenzene	_____
hexachlorobenzene	_____
hexachloroethane	_____
bis(2-chloroethyl)ether	_____
2-chloronaphthalene	_____
1,2-dichlorobenzene	1.5
1,3-dichlorobenzene	ND
1,4-dichlorobenzene	_____
3,3'-dichlorobenzene	_____
2,4-dinitrotoluene	_____
2,6-dinitrotoluene	_____
1,2-diphenylhydrazine (as azobenzene)	_____
fluoranthene	0.5
4-chlorophenyl phenyl ether	ND

BASE/NEUTRAL COMPOUNDS

ug/g

4-bromophenyl phenyl ether	ND
bis(2-chloroisopropyl)ether	_____
bis(2-chloroethoxy)methane	_____
hexachlorobutadiene	_____
hexachlorocyclopentadiene	_____
isophorone	_____
naphthalene	_____
nitrobenzene	_____
N-nitrosodimethylamine	_____
N-nitrosodiphenylamine	_____
N-nitrosodi-n-propylamine	ND
bis(2-ethylhexyl)phthalate	16
butyl benzyl phthalate	ND
di-n-butyl phthalate	_____
di-n-octyl phthalate	_____
diethyl phthalate	_____
dimethyl phthalate	_____
benzo(a)anthracene	ND
benzo(a)pyrene	0.5
3,4-benzofluoranthene	0.5
benzo(k)fluoranthene	0.5
chrysene	0.6
acenaphthylene	ND
anthracene	_____
benzo(ghi)perylene	_____
fluorene	_____
phenanthrene	_____
dibenzo(a,h)anthracene	_____
indeno(1,2,3-cd)pyrene	ND
pyrene	0.6

ND = NOT DETECTED

DETECTION LIMIT = 0.5 ug/g

Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

**SS4**

LAB NO. 17277 - 4B  
CLIENT I.D.: 4C

ACID COMPOUNDS

2,4,6-trichlorophenol \_\_\_\_\_  
p-chloro-m-cresol \_\_\_\_\_  
2-chlorophenol \_\_\_\_\_  
2,4-dichlorophenol \_\_\_\_\_  
2,4-dimethylphenol \_\_\_\_\_  
2-nitrophenol \_\_\_\_\_  
4-nitrophenol \_\_\_\_\_  
2,4-dinitrophenol \_\_\_\_\_  
4,6-dinitro-o-cresol \_\_\_\_\_  
pentachlorophenol \_\_\_\_\_  
phenol \_\_\_\_\_

BASE/NEUTRAL COMPOUNDS

acenaphthene \_\_\_\_\_ ND  
benzidine \_\_\_\_\_  
1,2,4-trichlorobenzene \_\_\_\_\_  
hexachlorobenzene \_\_\_\_\_  
hexachloroethane \_\_\_\_\_  
bis(2-chloroethyl)ether V  
2-chloronaphthalene ND  
1,2-dichlorobenzene II  
1,3-dichlorobenzene ND  
1,4-dichlorobenzene \_\_\_\_\_  
3,3'-dichlorobenzene \_\_\_\_\_  
2,4-dinitrotoluene \_\_\_\_\_  
2,6-dinitrotoluene \_\_\_\_\_  
1,2-diphenylhydrazine \_\_\_\_\_  
(as azobenzene) \_\_\_\_\_  
fluoranthene V  
4-chlorophenyl phenyl ether ND

BASE/NEUTRAL COMPOUNDS

4-bromophenyl phenyl ether ND  
bis(2-chloroisopropyl)ether \_\_\_\_\_  
bis(2-chloroethoxy)methane \_\_\_\_\_  
hexachlorobutadiene \_\_\_\_\_  
hexachlorocyclopentadiene \_\_\_\_\_  
isophorone \_\_\_\_\_  
naphthalene \_\_\_\_\_  
nitrobenzene \_\_\_\_\_  
N-nitrosodimethylamine \_\_\_\_\_  
N-nitrosodiphenylamine \_\_\_\_\_  
N-nitrosodi-n-propylamine \_\_\_\_\_  
bis(2-ethylhexyl)phthalate \_\_\_\_\_  
butyl benzyl phthalate \_\_\_\_\_  
di-n-butyl phthalate \_\_\_\_\_  
di-n-octyl phthalate \_\_\_\_\_  
diethyl phthalate \_\_\_\_\_  
dimethyl phthalate \_\_\_\_\_  
benzo(a)anthracene \_\_\_\_\_  
benzo(a)pyrene \_\_\_\_\_  
3,4-benzofluoranthene \_\_\_\_\_  
benzo(k)fluoranthene \_\_\_\_\_  
chrysene \_\_\_\_\_  
acenaphthylene \_\_\_\_\_  
anthracene \_\_\_\_\_  
benzo(ghi)perylene \_\_\_\_\_  
fluorene \_\_\_\_\_  
phenanthrene \_\_\_\_\_  
dibenzo(a,h)anthracene \_\_\_\_\_  
indeno(1,2,3-cd)pyrene \_\_\_\_\_  
pyrene ND

ND = NOT DETECTED

DETECTION LIMIT = 20 ug/g

Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

**SS5**

CLIENT:

LAB NO. 17277-5B  
CLIENT I.D.: SC

<u>ACID COMPOUNDS</u>	<u>ug/l</u>
2,4,6-trichlorophenol	
p-chloro-m-cresol	
2-chlorophenol	
2,4-dichlorophenol	
2,4-dimethylphenol	
2-nitrophenol	
4-nitrophenol	
2,4-dinitrophenol	
4,6-dinitro-o-cresol	
pentachlorophenol	
phenol	

<u>BASE/NEUTRAL COMPOUNDS</u>	
acenaphthene	ND
benzidine	
1,2,4-trichlorobenzene	
hexachlorobenzene	
hexachloroethane	
bis(2-chloroethyl)ether	✓
2-chloronaphthalene	ND
1,2-dichlorobenzene	0.15
1,3-dichlorobenzene	ND
1,4-dichlorobenzene	
3,3'-dichlorobenzene	
2,4-dinitrotoluene	
2,6-dinitrotoluene	
1,2-diphenylhydrazine	✓
(as azobenzene)	ND
fluoranthene	0.16
4-chlorophenyl phenyl ether	ND

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>ug/l</u>
4-bromophenyl phenyl ether	ND
bis(2-chloroisopropyl)ether	
bis(2-chloroethoxy)methane	
hexachlorobutadiene	
hexachlorocyclopentadiene	
isophorone	
naphthalene	
nitrobenzene	
N-nitrosodimethylamine	
N-nitrosodiphenylamine	✓
N-nitrosodi-n-propylamine	ND
bis(2-ethylhexyl)phthalate	1.8
butyl benzyl phthalate	ND
di-n-butyl phthalate	0.07
di-n-octyl phthalate	ND
diethyl phthalate	ND
dimethyl phthalate	ND
benzo(a)anthracene	0.10
benzo(a)pyrene	0.11
3,4-benzofluoranthene	0.22
benzo(k)fluoranthene	0.22
chrysene	0.12
acenaphthylene	ND
anthracene	ND
benzo(ghi)perylene	0.06
fluorene	
phenanthrene	0.10
dibenzo(a,h)anthracene	ND
indeno(1,2,3-cd)pyrene	0.06
pyrene	0.18

ND = NOT DETECTED

DETECTION LIMIT = 0.05 ug/l

Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO. 17277-MB  
CLIENT I.D.: METHOD BLANK

ACID COMPOUNDS

ug/g

2,4,6-trichlorophenol \_\_\_\_\_  
p-chloro-m-cresol \_\_\_\_\_  
2-chlorophenol \_\_\_\_\_  
2,4-dichlorophenol \_\_\_\_\_  
2,4-dimethylphenol \_\_\_\_\_  
2-nitrophenol \_\_\_\_\_  
4-nitrophenol \_\_\_\_\_  
2,4-dinitrophenol \_\_\_\_\_  
4,6-dinitro-o-cresol \_\_\_\_\_  
pentachlorophenol \_\_\_\_\_  
phenol \_\_\_\_\_

BASE/NEUTRAL COMPOUNDS

ND

acenaphthene \_\_\_\_\_ ND  
benzidine \_\_\_\_\_  
1,2,4-trichlorobenzene \_\_\_\_\_  
hexachlorobenzene \_\_\_\_\_  
hexachloroethane \_\_\_\_\_  
bis(2-chloroethyl)ether \_\_\_\_\_  
2-chloronaphthalene \_\_\_\_\_  
1,2-dichlorobenzene \_\_\_\_\_  
1,3-dichlorobenzene \_\_\_\_\_  
1,4-dichlorobenzene \_\_\_\_\_  
3,3'-dichlorobenzene \_\_\_\_\_  
2,4-dinitrotoluene \_\_\_\_\_  
2,6-dinitrotoluene \_\_\_\_\_  
1,2-diphenylhydrazine \_\_\_\_\_  
(as azobenzene) \_\_\_\_\_  
fluoranthene \_\_\_\_\_  
4-chlorophenyl phenyl ether ND

BASE/NEUTRAL COMPOUNDS

ug/g

4-bromophenyl phenyl ether ND  
bis(2-chloroisopropyl)ether \_\_\_\_\_  
bis(2-chloroethoxy)methane \_\_\_\_\_  
hexachlorobutadiene \_\_\_\_\_  
hexachlorocyclopentadiene \_\_\_\_\_  
isophorone \_\_\_\_\_  
naphthalene \_\_\_\_\_  
nitrobenzene \_\_\_\_\_  
N-nitrosodimethylamine \_\_\_\_\_  
N-nitrosodiphenylamine \_\_\_\_\_  
N-nitrosodi-n-propylamine \_\_\_\_\_  
bis(2-ethylhexyl)phthalate \_\_\_\_\_  
butyl benzyl phthalate \_\_\_\_\_  
di-n-butyl phthalate \_\_\_\_\_  
di-n-octyl phthalate \_\_\_\_\_  
diethyl phthalate \_\_\_\_\_  
dimethyl phthalate \_\_\_\_\_  
benzo(a)anthracene \_\_\_\_\_  
benzo(a)pyrene \_\_\_\_\_  
3,4-benzofluoranthene \_\_\_\_\_  
benzo(k)fluoranthene \_\_\_\_\_  
chrysene \_\_\_\_\_  
acenaphthylene \_\_\_\_\_  
anthracene \_\_\_\_\_  
benzo(ghi)perylene \_\_\_\_\_  
fluorene \_\_\_\_\_  
phenanthrene \_\_\_\_\_  
dibenzo(a,h)anthracene \_\_\_\_\_  
indeno(1,2,3-cd)pyrene \_\_\_\_\_  
pyrene \_\_\_\_\_ ND

ND = NOT DETECTED

DETECTION LIMIT = 0.05 ug/g

*SOIL UOP*

Measurement  
Sciences  
Corporation

SOIL SAMPLES

MSC

January 18, 1984

Geraghty & Miller  
6800 Jericho Tpke  
Syosset, N.Y. 11791  
Att: Mr. E. Werth

Enclosed are the results for the following twelve soil samples we received for analysis:

MSC LAB Number	SAMPLE I.D.
17346-1	Boring #1 8-10'
-2	Boring #2 4-6'
-3	Boring #2 8-10'
-4	Boring #3 0-2'
-5	Boring #3 8-10'
-6	Boring #4 9-11'
-7	Boring #5 6-8'
-8	Boring #5 8-10'
-9	Boring #6 6-8'
-10	Boring #6 8-10'
-11	Boring #7 2-6'
-12	Well #1 8-10'

The samples were analyzed by EPA Methods 624 and 625 modified for soil samples. The results are given on the enclosed data summary sheets. A few of the samples had higher detection limits because of the dilutions required to keep peaks from saturating.

No problems were encountered.

MSC Project #50842-E

Measurement Sciences Corporation

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SAMPLE #1: 2S

SAMPLE #2: 3S

ANALYTICAL PARAMETERS	#1	#2
Arsenic as As, mg/L	0.009	0.005
Chromium as Cr, mg/L	0.03	0.02
Lead as Pb, mg/L	0.058	0.006
Manganese as Mn, mg/L	0.04	3.4
Zinc as Zn, mg/L	0.03	0.03
Cadmium as Cd, mg/L	0.002	0.002

MSC #50842-F

# Measurement Sciences Corporation

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SAMPLE #1: Well 2S 11/21/83

SAMPLE #2: Well 3S 11/30/83

SAMPLE #3: Well 7S

ANALYTICAL PARAMETERS	#1	#2	#3
Arsenic as As, mg/L	---	0.010	---
Chromium as Cr, mg/L	---	0.05	---
Cyanide as CN, mg/L	0.02	0.02	0.02
Lead as Pb, mg/L	---	0.11	---
Manganese as Mn, mg/L	---	5.0	---
Zinc as Zn, mg/L	---	0.15	---
Cadmium as Cd, mg/L	---	0.002	---

MSC #50842-D

# Measurement Sciences Corporation

## Soil

### ~~Soil~~ Samples

SAMPLE #1: #1-8-10'  
#2: #2-4-6'  
#3: #2-8-10'  
#4: #3-0-2'  
#5: #3-8-10'  
#6: #4-9-11'

ANALYTICAL PARAMETERS	#1	#2	#3	#4	#5	#6
Phenol as phenols, mg/kgm	0.001	0.001	0.001	0.069	0.001	0.001
Arsenic as As, mg/kgm	0.49	0.58	1.3	63	0.60	1.8
Cyanide as CN, mg/kgm	0.3	0.3	0.3	110	0.3	0.3
Chromium as Cr, mg/kgm	10	26	850	5200	26	5.6
Lead as Pb, mg/kgm	4.3	7.1	13	68	2.0	2.9
Manganese as Mn, mg/kgm	5	380	650	20000	22	45
Zinc as Zn, mg/kgm	20	32	50	72	20	21
Cadmium as Cd, mg/kgm	0.011	0.088	0.060	0.24	0.052	0.013

SAMPLE #7: #5-6-8'  
#8: #5-8-10'  
#9: #6-6-8'  
#10: #6-8-10'  
#11: #7-2-6'  
#12: Well #11-8-10'

ANALYTICAL PARAMETERS	#7	#8	#9	#10	#11	#12
Phenol as phenols, mg/kgm	0.002	0.001	0.002	0.001	0.001	0.001
Arsenic as As, mg/kgm	0.88	1.4	1.4	1.0	9.3	1.9
Cyanide as CN, mg/kgm	0.3	0.3	0.3	0.3	0.3	0.3
Chromium as Cr, mg/kgm	8.4	12	5.5	8.0	13	3.6
Lead as Pb, mg/kgm	5.5	4.5	25	7.0	19	1.0
Manganese as Mn, mg/kgm	82	90	80	92	44	50
Zinc as Zn, mg/kgm	19	25	22	26	46	11
Cadmium as Cd, mg/kgm	0.028	0.088	0.092	0.013	0.44	0.009

# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-1  
CLIENT ID: Boring #1

8-16

PP#	VOLATILES	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbondisulfide	<200
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-1  
CLIENT I.D.: Boring #1

PP#	<u>ACID COMPOUNDS</u>	ug/Kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/Kg
21A	2,4,6-trichlorophenol	<200	40B	4-chlorophenyl phenyl ether	<200
22A	p-chloro-m-cresol	<200	41B	4-bromophenyl phenyl ether	<200
24A	2-chlorophenol	<200	42B	bis(2-chloroisopropyl)ether	<200
31A	2,4-dichlorophenol	<200	43B	bis(2-chloroethoxy)methane	<200
34A	2,4-dimethylphenol	<200	52B	hexachlorobutadiene	<200
57A	2-nitrophenol	<200	53B	hexachlorocyclopentadiene	<200
58A	4-nitrophenol	<200	54B	isophorone	<200
59A	2,4-dinitrophenol	<200	55B	naphthalene	<200
60A	4,6-dinitro-o-cresol	<200	56B	nitrobenzene	<200
64A	pentachlorophenol	<200	62B	N-nitrosodiphenylamine	<200
65A	phenol	<200	63B	N-nitrosodi-n-propylamine	<200
			66B	bis(2-ethylhexyl)phthalate	<200
			67B	butyl benzyl phthalate	<200
			68B	di-n-butyl phthalate	<200
13	acenaphthene	<200	69B	di-n-octyl phthalate	<200
53	benzidine	<200	70B	diethyl phthalate	<200
8B	1,2,4-trichlorobenzene	<200	71B	dimethyl phthalate	<200
9B	hexachlorobenzene	<200	72B	benzo(a)anthracene	<200
12B	hexachloroethane	<200	73B	benzo(a)pyrene	<200
18B	bis(2-chloroethyl)ether	<200	74B	3,4-benzofluoranthene	<200
20B	2-chloronaphthalene	<200	75B	benzo(k)fluoranthene	<200
25B	1,2-dichlorobenzene	<200	76B	chrysene	<200
26B	1,3-dichlorobenzene	<200	77B	acenaphthylene	<200
27B	1,4-dichlorobenzene	<200	78B	anthracene	<200
28B	3,3'-dichlorobenzidine	<200	79B	benzo(ghi)perylene	<200
35B	2,4-dinitrotoluene	<200	80B	fluorene	<200
36B	2,6-dinitrotoluene	<200	81B	phenanthrene	<200
37B	1,2-diphenylhydrazine (as azobenzene)	<200	82B	dibenzo(a,h)anthracene	<200
39B	fluoranthene	<200	83B	indeno(1,2,3-cd)pyrene	<200
			84B	pyrene	<200

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<200	C7	4-chloroaniline	<200
C2	2-methylphenol	<200	C8	dibenzofuran	<200
C3	4-methylphenol	<200	C9	2-methylnaphthalene	<200
C4	2,4,5-trichlorophenol	<200	C10	2-nitroaniline	<200
C5	aniline	<200	C11	3-nitroaniline	<200
C6	benzyl alcohol	<200	C12	4-nitroaniline	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-2

CLIENT ID: Boring #2 44-6

PP#	<u>VOLATILES</u>	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbodisulfide	<200
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-2  
CLIENT I.D.: Boring #2 - 4-6

<u>PP#</u>	<u>ACID COMPOUNDS</u>	<u>ug/Kg</u>	<u>PP#</u>	<u>BASE/NEUTRAL COMPOUNDS</u>	<u>ug/Kg</u>
21A	2,4,6-trichlorophenol	<200	40B	4-chlorophenyl phenyl ether	<200
22A	p-chloro-m-cresol	<200	41B	4-bromophenyl phenyl ether	<200
24A	2-chlorophenol	<200	42B	bis(2-chloroisopropyl)ether	<200
31A	2,4-dichlorophenol	<200	43B	bis(2-chloroethoxy)methane	<200
34A	2,4-dimethylphenol	<200	52B	hexachlorobutadiene	<200
57A	2-nitrophenol	<200	53B	hexachlorocyclopentadiene	<200
58A	4-nitrophenol	<200	54B	isophorone	<200
59A	2,4-dinitrophenol	<200	55B	naphthalene	<200
60A	4,6-dinitro-o-cresol	<200	56B	nitrobenzene	<200
64A	pentachlorophenol	<200	62B	N-nitrosodiphenylamine	<200
65A	phenol	<200	63B	N-nitrosodi-n-propylamine	<200
			66B	bis(2-ethylhexyl)phthalate	<200
			67B	butyl benzyl phthalate	<200
			68B	di-n-butyl phthalate	<200
1B	acenaphthene	<200	69B	di-n-octyl phthalate	<200
5B	benzidine	<200	70B	diethyl phthalate	<200
83	1,2,4-trichlorobenzene	<200	71B	dimethyl phthalate	<200
93	hexachlorobenzene	<200	72B	benzo(a)anthracene	<200
12B	hexachloroethane	<200	73B	benzo(a)pyrene	<200
18B	bis(2-chloroethyl)ether	<200	74B	3,4-benzofluoranthene	<200
20B	2-chloronaphthalene	<200	75B	benzo(k)fluoranthene	<200
25B	1,2-dichlorobenzene	<200	76B	chrysene	<200
26B	1,3-dichlorobenzene	<200	77B	acenaphthylene	<200
27B	1,4-dichlorobenzene	<200	78B	anthracene	<200
28B	3,3'-dichlorobenzidine	<200	79B	benzo(ghi)perylene	<200
35B	2,4-dinitrotoluene	<200	80B	fluorene	<200
36B	2,6-dinitrotoluene	<200	81B	phenanthrene	<200
37B	1,2-diphenylhydrazine (as azobenzene)	<200	82B	dibenzo(a,h)anthracene	<200
39B	fluoranthene	<200	83B	indeno(1,2,3-cd)pyrene	<200
			84B	pyrene	<200

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<200	C7	4-chloroaniline	<200
C2	2-methylphenol	<200	C8	dibenzofuran	<200
C3	4-methylphenol	<200	C9	2-methylnaphthalene	<200
C4	2,4,5-trichlorophenol	<200	C10	2-nitroaniline	<200
C5	aniline	<200	C11	3-nitroaniline	<200
C6	benzyl alcohol	<200	C12	4-nitroaniline	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-3  
CLIENT ID: Boring #2

8-10

PP#	VOLATILES	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbondisulfide	550
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

LAB NO.: 17346-3  
CLIENT I.D.: Boring #2 - 8 - 10

CLIENT:

PP#	<u>ACID COMPOUNDS</u>	ug/Kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/Kg
21A	2,4,6-trichlorophenol	<200	40B	4-chlorophenyl phenyl ether	<200
22A	p-chloro-m-cresol	<200	41B	4-bromophenyl phenyl ether	<200
24A	2-chlorophenol	<200	42B	bis(2-chloroisopropyl)ether	<200
31A	2,4-dichlorophenol	<200	43B	bis(2-chloroethoxy)methane	<200
34A	2,4-dimethylphenol	<200	52B	hexachlorobutadiene	<200
57A	2-nitrophenol	<200	53B	hexachlorocyclopentadiene	<200
58A	4-nitrophenol	<200	54B	isophorone	<200
59A	2,4-dinitrophenol	<200	55B	naphthalene	<200
60A	4,6-dinitro-o-cresol	<200	56B	nitrobenzene	<200
64A	pentachlorophenol	<200	62B	N-nitrosodiphenylamine	<200
65A	phenol	<200	63B	N-nitrosodi-n-propylamine	<200
	<u>BASE/NEUTRAL COMPOUNDS</u>				
1B	acenaphthene	<200	67B	butyl benzyl phthalate	<200
5B	benzidine	<200	68B	di-n-butyl phthalate	<200
8B	1,2,4-trichlorobenzene	<200	69B	di-n-octyl phthalate	<200
9B	hexachlorobenzene	<200	70B	diethyl phthalate	<200
12B	hexachloroethane	<200	71B	dimethyl phthalate	<200
18B	bis(2-chloroethyl)ether	<200	72B	benzo(a)anthracene	<200
20B	2-chloronaphthalene	<200	73B	benzo(a)pyrene	<200
25B	1,2-dichlorobenzene	<200	74B	3,4-benzofluoranthene	<200
26B	1,3-dichlorobenzene	<200	75B	benzo(k)fluoranthene	<200
27B	1,4-dichlorobenzene	<200	76B	chrysene	<200
28B	3,3'-dichlorobenzidine	<200	77B	acenaphthylene	<200
35B	2,4-dinitrotoluene	<200	78B	anthracene	<200
36B	2,6-dinitrotoluene	<200	79B	benzo(ghi)perylene	<200
37B	1,2-diphenylhydrazine (as azobenzene)	<200	80B	fluorene	<200
39B	fluoranthene	<200	81B	phenanthrene	<200
			82B	dibenzo(a,h)anthracene	<200
			83B	indeno(1,2,3-cd)pyrene	<200
			84B	pyrene	<200

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<200	C7	4-chloroaniline	<200
C2	2-methylphenol	<200	C8	dibenzofuran	<200
C3	4-methylphenol	<200	C9	2-methylnaphthalene	<200
C4	2,4,5-trichlorophenol	<200	C10	2-nitroaniline	<200
C5	aniline	<200	C11	3-nitroaniline	<200
C6	benzyl alcohol	<200	C12	4-nitroaniline	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-4  
CLIENT ID: Boring #3 C-2

PP#	VOLATILES	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	940
6V	carbon tetrachloride	<200
7V	chlorobenzene	3400
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	1800
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	2600
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	920
86V	toluene	16000
87V	trichloroethylene	280
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbondisulfide	<200
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	35000

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-4  
CLIENT I.D.: Boring # 3

PP#	<u>ACID COMPOUNDS</u>	ug/kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/kg
21A	2,4,6-trichlorophenol	<2000	40B	4-chlorophenyl phenyl ether	<2000
22A	p-chloro-m-cresol	<2000	41B	4-bromophenyl phenyl ether	<2000
24A	2-chlorophenol	<2000	42B	bis(2-chloroisopropyl)ether	<2000
31A	2,4-dichlorophenol	<2000	43B	bis(2-chloroethoxy)methane	<2000
34A	2,4-dimethylphenol	<2000	52B	hexachlorobutadiene	<2000
57A	2-nitrophenol	<2000	53B	hexachlorocyclopentadiene	<2000
58A	4-nitrophenol	<2000	54B	isophorone	<2000
59A	2,4-dinitrophenol	<2000	55B	naphthalene	1300
60A	4,6-dinitro-o-cresol	<2000	56B	nitrobenzene	<2000
64A	pentachlorophenol	<2000	62B	N-nitrosodiphenylamine	<2000
65A	phenol	3400	63B	N-nitrosodi-n-propylamine	<2000
			66B	bis(2-ethylhexyl)phthalate	<2000
			67B	butyl benzyl phthalate	<2000
			68B	di-n-butyl phthalate	<2000
1B	acenaphthene	<2000	69B	di-n-octyl phthalate	<2000
53	benzidine	<2000	70B	diethyl phthalate	<2000
83	1,2,4-trichlorobenzene	19000	71B	dimethyl phthalate	<2000
93	hexachlorobenzene	<2000	72B	benzo(a)anthracene	<2000
123	hexachloroethane	<2000	73B	benzo(a)pyrene	<2000
18B	bis(2-chloroethyl)ether	<2000	74B	3,4-benzofluoranthene	<2000
20B	2-chloronaphthalene	<2000	75B	benzo(k)fluoranthene	<2000
25B	1,2-dichlorobenzene	9000	76B	chrysene	<2000
26B	1,3-dichlorobenzene	1500	77B	acenaphthylene	<2000
27B	1,4-dichlorobenzene	8000	78B	anthracene	<2000
28B	3,3'-dichlorobenzidine	<2000	79B	benzo(ghi)perylene	<2000
35B	2,4-dinitrotoluene	<2000	80B	fluorene	<2000
36B	2,6-dinitrotoluene	<2000	81B	phenanthrene	<2000
37B	1,2-diphenylhydrazine (as azobenzene)	82B		dibenzo(a,h)anthracene	<2000
39B	fluoranthene	<2000	83B	indeno(1,2,3-cd)pyrene	<2000
		<2000	84B	pyrene	<2000

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<2000	C7	4-chloroaniline	<2000
C2	2-methylphenol	<2000	C8	dibenzofuran	<2000
C3	4-methylphenol	<2000	C9	2-methylnaphthalene	<2000
C4	2,4,5-trichlorophenol	<2000	C10	2-nitroaniline	<2000
C5	aniline	<2000	C11	3-nitroaniline	<2000
C6	benzyl alcohol	<2000	C12	4-nitroaniline	<2000

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Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-5

CLIENT ID: Boring #3

8-10

PP#	<u>VOLATILES</u>	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbonyl sulfide	230
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-5  
CLIENT I.D.: Boring #3 S-10

PP#	<u>ACID COMPOUNDS</u>	ug/Kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/Kg
21A	2,4,6-trichlorophenol	<200	40B	4-chlorophenyl phenyl ether	<200
22A	p-chloro-m-cresol	<200	41B	4-bromophenyl phenyl ether	<200
24A	2-chlorophenol	<200	42B	bis(2-chloroisopropyl)ether	<200
31A	2,4-dichlorophenol	<200	43B	bis(2-chloroethoxy)methane	<200
34A	2,4-dimethylphenol	<200	52B	hexachlorobutadiene	<200
57A	2-nitrophenol	<200	53B	hexachlorocyclopentadiene	<200
58A	4-nitrophenol	<200	54B	isophorone	<200
59A	2,4-dinitrophenol	<200	55B	naphthalene	<200
60A	4,6-dinitro-o-cresol	<200	56B	nitrobenzene	<200
64A	pentachlorophenol	<200	62B	N-nitrosodiphenylamine	<200
65A	phenol	<200	63B	N-nitrosodi-n-propylamine	<200
	<u>BASE/NEUTRAL COMPOUNDS</u>		66B	bis(2-ethylhexyl)phthalate	<200
1B	acenaphthene	<200	67B	butyl benzyl phthalate	<200
5B	benzidine	<200	68B	di-n-butyl phthalate	<200
83	1,2,4-trichlorobenzene	<200	69B	di-n-octyl phthalate	<200
93	hexachlorobenzene	<200	70B	diethyl phthalate	<200
123	hexachloroethane	<200	71B	dimethyl phthalate	<200
183	bis(2-chloroethyl)ether	<200	72B	benzo(a)anthracene	<200
203	2-chloronaphthalene	<200	73B	benzo(a)pyrene	<200
25B	1,2-dichlorobenzene	<200	74B	3,4-benzofluoranthene	<200
26B	1,3-dichlorobenzene	<200	75B	benzo(k)fluoranthene	<200
27B	1,4-dichlorobenzene	<200	76B	chrysene	<200
283	3,3'-dichlorobenzidine	<200	77B	acenaphthylene	<200
35B	2,4-dinitrotoluene	<200	78B	anthracene	<200
36B	2,6-dinitrotoluene	<200	79B	benzo(ghi)perylene	<200
37B	1,2-diphenylhydrazine (as azobenzene)	<200	80B	fluorene	<200
39B	fluoranthene	<200	81B	phenanthrene	<200
			82B	dibenzo(a,h)anthracene	<200
			83B	indeno(1,2,3-cd)pyrene	<200
			84B	pyrene	<200

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<200	C7	4-chloroaniline	<200
C2	2-methylphenol	<200	C8	dibenzofuran	<200
C3	4-methylphenol	<200	C9	2-methylnaphthalene	<200
C4	2,4,5-trichlorophenol	<200	C10	2-nitroaniline	<200
C5	aniline	<200	C11	3-nitroaniline	<200
C6.	benzyl alcohol	<200	C12	4-nitroaniline	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-6  
CLIENT ID: Boring #4 9-11

PP#	VOLATILES	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	33000
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbodisulfide	790
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-6  
CLIENT I.D.: Boring #4 9-11

PP#	<u>ACID COMPOUNDS</u>	ug/Kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/Kg
21A	2,4,6-trichlorophenol	<200	40B	4-chlorophenyl phenyl ether	<200
22A	p-chloro-m-cresol	<200	41B	4-bromophenyl phenyl ether	<200
24A	2-chlorophenol	<200	42B	bis(2-chloroisopropyl)ether	<200
31A	2,4-dichlorophenol	<200	43B	bis(2-chloroethoxy)methane	<200
34A	2,4-dimethylphenol	<200	52B	hexachlorobutadiene	<200
57A	2-nitrophenol	<200	53B	hexachlorocyclopentadiene	<200
58A	4-nitrophenol	<200	54B	isophorone	<200
59A	2,4-dinitrophenol	<200	55B	naphthalene	<200
60A	4,6-dinitro-o-cresol	<200	56B	nitrobenzene	<200
64A	pentachlorophenol	<200	62B	N-nitrosodiphenylamine	<200
65A	phenol	<200	63B	N-nitrosodi-n-propylamine	<200
	<u>BASE/NEUTRAL COMPOUNDS</u>		66B	bis(2-ethylhexyl)phthalate	5000
			67B	butyl benzyl phthalate	<200
			68B	di-n-butyl phthalate	<200
13	acenaphthene	<200	69B	di-n-octyl phthalate	<200
5B	benzidine	<200	70B	diethyl phthalate	<200
8B	1,2,4-trichlorobenzene	<200	71B	dimethyl phthalate	<200
9B	hexachlorobenzene	<200	72B	benzo(a)anthracene	<200
12B	hexachloroethane	<200	73B	benzo(a)pyrene	<200
18B	bis(2-chloroethyl)ether	<200	74B	3,4-benzofluoranthene	<200
20B	2-chloronaphthalene	<200	75B	benzo(k)fluoranthene	<200
25B	1,2-dichlorobenzene	<200	76B	chrysene	<200
26B	1,3-dichlorobenzene	<200	77B	acenaphthylene	<200
27B	1,4-dichlorobenzene	<200	78B	anthracene	<200
28B	3,3'-dichlorobenzidine	<200	79B	benzo(ghi)perylene	<200
35B	2,4-dinitrotoluene	<200	80B	fluorene	<200
36B	2,6-dinitrotoluene	<200	81B	phenanthrene	<200
37B	1,2-diphenylhydrazine (as azobenzene)	<200	82B	dibenzo(a,h)anthracene	<200
39B	fluoranthene	<200	83B	indeno(1,2,3-cd)pyrene	<200
			84B	pyrene	<200

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<200	C7	4-chloroaniline	<200
C2	2-methylphenol	<200	C8	dibenzofuran	<200
C3	4-methylphenol	<200	C9	2-methylnaphthalene	<200
C4	2,4,5-trichlorophenol	<200	C10	2-nitroaniline	<200
C5	aniline	<200	C11	3-nitroaniline	<200
C6	benzyl alcohol	<200	C12	4-nitroaniline	<200

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Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-7  
CLIENT ID: Boring #5 6-3

PP#	<u>VOLATILES</u>	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbondisulfide	250
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-7

CLIENT I.D.: Boring #5

PP#	<u>ACID COMPOUNDS</u>	ug/kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/kg
21A	2,4,6-trichlorophenol	<1000	40B	4-chlorophenyl phenyl ether	<1000
22A	p-chloro-m-cresol	<1000	41B	4-bromophenyl phenyl ether	<1000
24A	2-chlorophenol	<1000	42B	bis(2-chloroisopropyl)ether	<1000
31A	2,4-dichlorophenol	<1000	43B	bis(2-chloroethoxy)methane	<1000
34A	2,4-dimethylphenol	<1000	52B	hexachlorobutadiene	<1000
57A	2-nitrophenol	<1000	53B	hexachlorocyclopentadiene	<1000
58A	4-nitrophenol	<1000	54B	isophorone	<1000
59A	2,4-dinitrophenol	<1000	55B	naphthalene	<1000
60A	4,6-dinitro-o-cresol	<1000	56B	nitrobenzene	<1000
64A	pentachlorophenol	<1000	62B	N-nitrosodiphenylamine	<1000
65A	phenol	<1000	63B	N-nitrosodi-n-propylamine	<1000
			66B	bis(2-ethylhexyl)phthalate	<1000
			67B	butyl benzyl phthalate	<1000
			68B	di-n-butyl phthalate	<1000
				di-n-octyl phthalate	<1000
1B	acenaphthene	<1000	69B	diethyl phthalate	<1000
5B	benzidine	<1000	70B	dimethyl phthalate	<1000
8B	1,2,4-trichlorobenzene	<1000	71B	benzo(a)anthracene	<1000
9B	hexachlorobenzene	<1000	72B	benzo(a)pyrene	<1000
12B	hexachloroethane	<1000	73B	3,4-benzofluoranthene	<1000
18B	bis(2-chloroethyl)ether	<1000	74B	benzo(k)fluoranthene	<1000
20B	2-chloronaphthalene	<1000	75B	chrysene	<1000
25B	1,2-dichlorobenzene	<1000	76B	acenaphthylene	<1000
26B	1,3-dichlorobenzene	<1000	77B	anthracene	<1000
27B	1,4-dichlorobenzene	<1000	78B	benzo(ghi)perylene	<2000
28B	3,3'-dichlorobenzidine	<1000	79B	fluorene	<1000
35B	2,4-dinitrotoluene	<1000	80B	phenanthrene	<1000
36B	2,6-dinitrotoluene	<1000	81B	dibenzo(a,h)anthracene	<1000
37B	1,2-diphenylhydrazine (as azobenzene)	<1000	82B	indeno(1,2,3-cd)pyrene	<1000
39B	fluoranthene	<1000	83B	pyrene	<1000

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<1000	C7	4-chloroaniline	<1000
C2	2-methylphenol	<1000	C8	dibenzofuran	<1000
C3	4-methylphenol	<1000	C9	2-methylnaphthalene	<1000
C4	2,4,5-trichlorophenol	<1000	C10	2-nitroaniline	<1000
C5	aniline	<1000	C11	3-nitroaniline	<1000
C6	benzyl alcohol	<1000	C12	4-nitroaniline	<1000

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-8  
CLIENT ID: Boring #5

J-10

PP#	<u>VOLATILES</u>	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbonyl sulfide	<200
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-8  
CLIENT I.D.: Boring #5 J - /C

PP#	<u>ACID COMPOUNDS</u>	ug/Kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/Kg
21A	2,4,6-trichlorophenol	<200	40B	4-chlorophenyl phenyl ether	<200
22A	p-chloro-m-cresol	<200	41B	4-bromophenyl phenyl ether	<200
24A	2-chlorophenol	<200	42B	bis(2-chloroisopropyl)ether	<200
31A	2,4-dichlorophenol	<200	43B	bis(2-chloroethoxy)methane	<200
34A	2,4-dimethylphenol	<200	52B	hexachlorobutadiene	<200
57A	2-nitrophenol	<200	53B	hexachlorocyclopentadiene	<200
58A	4-nitrophenol	<200	54B	isophorone	<200
59A	2,4-dinitrophenol	<200	55B	naphthalene	<200
60A	4,6-dinitro-o-cresol	<200	56B	nitrobenzene	<200
64A	pentachlorophenol	<200	62B	N-nitrosodiphenylamine	<200
65A	phenol	<200	63B	N-nitrosodi-n-propylamine	<200
			66B	bis(2-ethylhexyl)phthalate	<200
			67B	butyl benzyl phthalate	<200
			68B	di-n-butyl phthalate	<200
13	acenaphthene	<200	69B	di-n-octyl phthalate	<200
53	benzidine	<200	70B	diethyl phthalate	<200
83	1,2,4-trichlorobenzene	<200	71B	dimethyl phthalate	<200
93	hexachlorobenzene	<200	72B	benzo(a)anthracene	<200
12B	hexachloroethane	<200	73B	benzo(a)pyrene	<200
18B	bis(2-chloroethyl)ether	<200	74B	3,4-benzofluoranthene	<200
20B	2-chloronaphthalene	<200	75B	benzo(k)fluoranthene	<200
25B	1,2-dichlorobenzene	<200	76B	chrysene	<200
26B	1,3-dichlorobenzene	<200	77B	acenaphthylene	<200
27B	1,4-dichlorobenzene	<200	78B	anthracene	<200
28B	3,3'-dichlorobenzidine	<200	79B	benzo(ghi)perylene	<200
35B	2,4-dinitrotoluene	<200	80B	fluorene	<200
36B	2,6-dinitrotoluene	<200	81B	phenanthrene	<200
37B	1,2-diphenylhydrazine (as azobenzene)	<200	82B	dibenzo(a,h)anthracene	<200
393	fluoranthene	<200	83B	indeno(1,2,3-cd)pyrene	<200
			84B	pyrene	<200

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<200	C7	4-chloroaniline	<200
C2	2-methylphenol	<200	C8	dibenzofuran	<200
C3	4-methylphenol	<200	C9	2-methylnaphthalene	<200
C4	2,4,5-trichlorophenol	<200	C10	2-nitroaniline	<200
C5	aniline	<200	C11	3-nitroaniline	<200
C6	benzyl alcohol	<200	C12	4-nitroaniline	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-9  
CLIENT ID: Boring #6

PP#	<u>VOLATILES</u>	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbondisulfide	<200
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-9  
CLIENT I.D.: Boring #6

PP#	<u>ACID COMPOUNDS</u>	ug/Kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/Kg
21A	2,4,6-trichlorophenol	<400	40B	4-chlorophenyl phenyl ether	<400
22A	p-chloro-m-cresol	<400	41B	4-bromophenyl phenyl ether	<400
24A	2-chlorophenol	<400	42B	bis(2-chloroisopropyl)ether	<400
31A	2,4-dichlorophenol	<400	43B	bis(2-chloroethoxy)methane	<400
34A	2,4-dimethylphenol	<400	52B	hexachlorobutadiene	<400
57A	2-nitrophenol	<400	53B	hexachlorocyclopentadiene	<400
58A	4-nitrophenol	<400	54B	isophorone	<400
59A	2,4-dinitrophenol	<400	55B	naphthalene	<400
60A	4,6-dinitro-o-cresol	<400	56B	nitrobenzene	<400
64A	pentachlorophenol	<400	62B	N-nitrosodiphenylamine	<400
65A	phenol	<400	63B	N-nitrosodi-n-propylamine	<400
			66B	bis(2-ethylhexyl)phthalate	9000
			67B	butyl benzyl phthalate	<400
			68B	di-n-butyl phthalate	<400
1B	acenaphthene	<400	69B	di-n-octyl phthalate	<400
5B	benzidine	<400	70B	diethyl phthalate	<400
8B	1,2,4-trichlorobenzene	<400	71B	dimethyl phthalate	<400
9B	hexachlorobenzene	<400	72B	benzo(a)anthracene	<400
12B	hexachloroethane	<400	73B	benzo(a)pyrene	<400
18B	bis(2-chloroethyl)ether	<400	74B	3,4-benzofluoranthene	<400
20B	2-chloronaphthalene	<400	75B	benzo(k)fluoranthene	<400
25B	1,2-dichlorobenzene	<400	76B	chrysene	<400
26B	1,3-dichlorobenzene	<400	77B	acenaphthylene	<400
27B	1,4-dichlorobenzene	<400	78B	anthracene	<400
28B	3,3'-dichlorobenzidine	<400	79B	benzo(ghi)perylene	<400
35B	2,4-dinitrotoluene	<400	80B	fluorene	<400
36B	2,6-dinitrotoluene	<400	81B	phenanthrene	<400
37B	1,2-diphenylhydrazine (as azobenzene)	<400	82B	dibenzo(a,h)anthracene	<400
39B	fluoranthene	<400	83B	indeno(1,2,3-cd)pyrene	<400
			84B	pyrene	<400

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<400	C7	4-chloroaniline	<400
C2	2-methylphenol	<400	C8	dibenzofuran	<400
C3	4-methylphenol	<400	C9	2-methylnaphthalene	<400
C4	2,4,5-trichlorophenol	<400	C10	2-nitroaniline	<400
C5	aniline	<400	C11	3-nitroaniline	<400
C6	benzyl alcohol	<400	C12	4-nitroaniline	<400

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-10  
CLIENT ID: Boring # 6 S -10 ,

PP#	<u>VOLATILES</u>	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbondisulfide	240
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-10

CLIENT I.D.: Boring #6

8-10

PP#	<u>ACID COMPOUNDS</u>	ug/Kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/Kg
21A	2,4,6-trichlorophenol	<200	40B	4-chlorophenyl phenyl ether	<200
22A	p-chloro-m-cresol	<200	41B	4-bromophenyl phenyl ether	<200
24A	2-chlorophenol	<200	42B	bis(2-chloroisopropyl)ether	<200
31A	2,4-dichlorophenol	<200	43B	bis(2-chloroethoxy)methane	<200
34A	2,4-dimethylphenol	<200	52B	hexachlorobutadiene	<200
57A	2-nitrophenol	<200	53B	hexachlorocyclopentadiene	<200
58A	4-nitrophenol	<200	54B	isophorone	<200
59A	2,4-dinitrophenol	<200	55B	naphthalene	<200
60A	4,6-dinitro-o-cresol	<200	56B	nitrobenzene	<200
64A	pentachlorophenol	<200	62B	N-nitrosodiphenylamine	<200
65A	phenol	<200	63B	N-nitrosodi-n-propylamine	<200
	<u>BASE/NEUTRAL COMPOUNDS</u>		66B	bis(2-ethylhexyl)phthalate	4600
1B	acenaphthene	<200	67B	butyl benzyl phthalate	<200
58	benzidine	<200	68B	di-n-butyl phthalate	<200
83	1,2,4-trichlorobenzene	<200	69B	di-n-octyl phthalate	<200
9B	hexachlorobenzene	<200	70B	diethyl phthalate	<200
12B	hexachloroethane	<200	71B	dimethyl phthalate	<200
18B	bis(2-chloroethyl)ether	<200	72B	benzo(a)anthracene	<200
20B	2-chloronaphthalene	<200	73B	benzo(a)pyrene	<200
25B	1,2-dichlorobenzene	<200	74B	3,4-benzofluoranthene	<200
26B	1,3-dichlorobenzene	<200	75B	benzo(k)fluoranthene	<200
27B	1,4-dichlorobenzene	<200	76B	chrysene	<200
28B	3,3'-dichlorobenzidine	<200	77B	acenaphthylene	<200
35B	2,4-dinitrotoluene	<200	78B	anthracene	<200
36B	2,6-dinitrotoluene	<200	79B	benzo(ghi)perylene	<200
37B	1,2-diphenylhydrazine (as azobenzene)	<200	80B	fluorene	<200
39B	fluoranthene	<200	81B	phenanthrene	<200
			82B	dibenzo(a,h)anthracene	<200
			83B	indeno(1,2,3-cd)pyrene	<200
			84B	pyrene	<200

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<200	C7	4-chloroaniline	<200
C2	2-methylphenol	<200	C8	dibenzofuran	<200
C3	4-methylphenol	<200	C9	2-methylnaphthalene	<200
C4	2,4,5-trichlorophenol	<200	C10	2-nitroaniline	<200
C5	aniline	<200	C11	3-nitroaniline	<200
C6	benzyl alcohol	<200	C12	4-nitroaniline	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-11  
CLIENT ID: Boring # 7

2-6

PP#	VOLATILES	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbonyl sulfide	120
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-11

CLIENT I.D.: Boring #7 2-6

PP#	<u>ACID COMPOUNDS</u>	ug/Kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/Kg
21A	2,4,6-trichlorophenol	<200	40B	4-chlorophenyl phenyl ether	<200
22A	p-chloro-m-cresol	<200	41B	4-bromophenyl phenyl ether	<200
24A	2-chlorophenol	<200	42B	bis(2-chloroisopropyl)ether	<200
31A	2,4-dichlorophenol	<200	43B	bis(2-chloroethoxy)methane	<200
34A	2,4-dimethylphenol	<200	52B	hexachlorobutadiene	<200
57A	2-nitrophenol	<200	53B	hexachlorocyclopentadiene	<200
58A	4-nitrophenol	<200	54B	isophorone	<200
59A	2,4-dinitrophenol	<200	55B	naphthalene	<200
60A	4,6-dinitro-o-cresol	<200	56B	nitrobenzene	<200
64A	pentachlorophenol	<200	62B	N-nitrosodiphenylamine	<200
65A	phenol	<200	63B	N-nitrosodi-n-propylamine	<200
			66B	bis(2-ethylhexyl)phthalate	2000
			67B	butyl benzyl phthalate	<200
			68B	di-n-butyl phthalate	3000
13	acenaphthene	<200	69B	di-n-octyl phthalate	<200
5B	benzidine	<200	70B	diethyl phthalate	<200
83	1,2,4-trichlorobenzene	<200	71B	dimethyl phthalate	<200
9B	hexachlorobenzene	<200	72B	benzo(a)anthracene	<200
12B	hexachloroethane	<200	73B	benzo(a)pyrene	<200
18B	bis(2-chloroethyl)ether	<200	74B	3,4-benzofluoranthene	<200
20B	2-chloronaphthalene	<200	75B	benzo(k)fluoranthene	<200
25B	1,2-dichlorobenzene	<200	76B	chrysene	<200
26B	1,3-dichlorobenzene	<200	77B	acenaphthylene	<200
27B	1,4-dichlorobenzene	<200	78B	anthracene	<200
28B	3,3'-dichlorobenzidine	<200	79B	benzo(ghi)perylene	<200
35B	2,4-dinitrotoluene	<200	80B	fluorene	<200
36B	2,6-dinitrotoluene	<200	81B	phenanthrene	<200
37B	1,2-diphenylhydrazine (as azobenzene)	<200	82B	dibenzo(a,h)anthracene	<200
39B	fluoranthene	<200	83B	indeno(1,2,3-cd)pyrene	<200
			84B	pyrene	<200

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<200	C7	4-chloroaniline	<200
C2	2-methylphenol	<200	C8	dibenzofuran	<200
C3	4-methylphenol	<200	C9	2-methylnaphthalene	<200
C4	2,4,5-trichlorophenol	<200	C10	2-nitroaniline	<200
C5	aniline	<200	C11	3-nitroaniline	<200
C6	benzyl alcohol	<200	C12	4-nitroaniline	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17346-12  
CLIENT ID: Well # 11 J-10

PP#	VOLATILES	ug/Kg
2V	acrolein	<200
3V	acrylonitrile	<200
4V	benzene	<200
6V	carbon tetrachloride	<200
7V	chlorobenzene	<200
10V	1,2-dichloroethane	<200
11V	1,1,1-trichloroethane	<200
13V	1,1,-dichloroethane	<200
14V	1,1,2-trichloroethane	<200
15V	1,1,2,2-tetrachloroethane	<200
16V	chloroethane	<200
19V	2-chloroethylvinyl ether	<200
23V	chloroform	<200
29V	1,1-dichloroethylene	<200
30V	1,2-trans-dichloroethylene	<200
32V	1,2-dichloropropane	<200
33V	1,3-dichloropropylene	<200
38V	ethylbenzene	<200
44V	methylene chloride	<200
45V	methyl chloride	<200
46V	methyl bromide	<200
47V	bromoform	<200
48V	dichlorobromomethane	<200
49V	trichlorofluoromethane	<200
50V	dichlorodifluoromethane	<200
51V	chlorodibromomethane	<200
85V	tetrachloroethylene	<200
86V	toluene	<200
87V	trichloroethylene	<200
88V	vinyl chloride	<200
C13	acetone	<200
C14	2-butanone	<200
C15	carbonyl sulfide	260
C16	2-hexanone	<200
C17	4-methyl-2-pentanone	<200
C18	styrene	<200
C19	vinyl acetate	<200
C20	total xylenes	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17346-12  
CLIENT I.D.: Well # 11 8-10

PP#	<u>ACID COMPOUNDS</u>	ug/kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/kg
21A	2,4,6-trichlorophenol	<1000	40B	4-chlorophenyl phenyl ether	<1000
22A	p-chloro-m-cresol	<1000	41B	4-bromophenyl phenyl ether	<1000
24A	2-chlorophenol	<1000	42B	bis(2-chloroisopropyl)ether	<1000
31A	2,4-dichlorophenol	<1000	43B	bis(2-chloroethoxy)methane	<1000
34A	2,4-dimethylphenol	<1000	52B	hexachlorobutadiene	<1000
57A	2-nitrophenol	<1000	53B	hexachlorocyclopentadiene	<1000
58A	4-nitrophenol	<1000	54B	isophorone	<1000
59A	2,4-dinitrophenol	<1000	55B	naphthalene	<1000
60A	4,6-dinitro-o-cresol	<1000	56B	nitrobenzene	<1000
64A	pentachlorophenol	<1000	62B	N-nitrosodiphenylamine	<1000
65A	phenol	<1000	63B	N-nitrosodi-n-propylamine	<1000
			66B	bis(2-ethylhexyl)phthalate	<1000
			67B	butyl benzyl phthalate	<1000
			68B	di-n-butyl phthalate	<1000
1B	acenaphthene	<1000	69B	di-n-octyl phthalate	<1000
5B	benzidine	<1000	70B	diethyl phthalate	<1000
83	1,2,4-trichlorobenzene	<1000	71B	dimethyl phthalate	<1000
9B	hexachlorobenzene	<1000	72B	benzo(a)anthracene	<1000
12B	hexachloroethane	<1000	73B	benzo(a)pyrene	<1000
18B	bis(2-chloroethyl)ether	<1000	74B	3,4-benzofluoranthene	<1000
20B	2-chloronaphthalene	<1000	75B	benzo(k)fluoranthene	<1000
25B	1,2-dichlorobenzene	<1000	76B	chrysene	<1000
26B	1,3-dichlorobenzene	<1000	77B	acenaphthylene	<1000
27B	1,4-dichlorobenzene	<1000	78B	anthracene	<1000
28B	3,3'-dichlorobenzidine	<1000	79B	benzo(ghi)perylene	<2000
35B	2,4-dinitrotoluene	<1000	80B	fluorene	<1000
36B	2,6-dinitrotoluene	<1000	81B	phenanthrene	<1000
37B	1,2-diphenylhydrazine (as azobenzene)	<1000	82B	dibenzo(a,h)anthracene	<1000
39B	fluoranthene	<1000	83B	indeno(1,2,3-cd)pyrene	<1000
			84B	pyrene	<1000

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<1000	C7	4-chloroaniline	<1000
C2	2-methylphenol	<1000	C8	dibenzofuran	<1000
C3	4-methylphenol	<1000	C9	2-methylnaphthalene	<1000
C4	2,4,5-trichlorophenol	<1000	C10	2-nitroaniline	<1000
C5	aniline	<1000	C11	3-nitroaniline	<1000
C6	benzyl alcohol	<1000	C12	4-nitroaniline	<1000

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

LAB NO.: 17346

CLIENT:

CLIENT I.D.: Method Blank

PP#	<u>ACID COMPOUNDS</u>	ug/Kg	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/Kg
21A	2,4,6-trichlorophenol	<200	40B	4-chlorophenyl phenyl ether	<200
22A	p-chloro-m-cresol	<200	41B	4-bromophenyl phenyl ether	<200
24A	2-chlorophenol	<200	42B	bis(2-chloroisopropyl)ether	<200
31A	2,4-dichlorophenol	<200	43B	bis(2-chloroethoxy)methane	<200
34A	2,4-dimethylphenol	<200	52B	hexachlorobutadiene	<200
57A	2-nitrophenol	<200	53B	hexachlorocyclopentadiene	<200
58A	4-nitrophenol	<200	54B	isophorone	<200
59A	2,4-dinitrophenol	<200	55B	naphthalene	<200
60A	4,6-dinitro-o-cresol	<200	56B	nitrobenzene	<200
64A	pentachlorophenol	<200	62B	N-nitrosodiphenylamine	<200
65A	phenol	<200	63B	N-nitrosodi-n-propylamine	<200
			66B	bis(2-ethylhexyl)phthalate	<200
			67B	butyl benzyl phthalate	<200
			68B	di-n-butyl phthalate	<200
			69B	di-n-octyl phthalate	<200
1B	acenaphthene	<200	70B	diethyl phthalate	<200
5B	benzidine	<200	71B	dimethyl phthalate	<200
8B	1,2,4-trichlorobenzene	<200	72B	benzo(a)anthracene	<200
9B	hexachlorobenzene	<200	73B	benzo(a)pyrene	<200
12B	hexachloroethane	<200	74B	3,4-benzofluoranthene	<200
18B	bis(2-chloroethyl)ether	<200	75B	benzo(k)fluoranthene	<200
20B	2-chloronaphthalene	<200	76B	chrysene	<200
25B	1,2-dichlorobenzene	<200	77B	acenaphthylene	<200
26B	1,3-dichlorobenzene	<200	78B	anthracene	<200
27B	1,4-dichlorobenzene	<200	79B	benzo(ghi)perylene	<200
28B	3,3'-dichlorobenzidine	<200	80B	fluorene	<200
35B	2,4-dinitrotoluene	<200	81B	phenanthrene	<200
36B	2,6-dinitrotoluene	<200	82B	dibenzo(a,h)anthracene	<200
37B	1,2-diphenylhydrazine (as azobenzene)	<200	83B	indeno(1,2,3-cd)pyrene	<200
39B	fluoranthene	<200	84B	pyrene	<200

### NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<200	C7	4-chloroaniline	<200
C2	2-methylphenol	<200	C8	dibenzofuran	<200
C3	4-methylphenol	<200	C9	2-methylnaphthalene	<200
C4	2,4,5-trichlorophenol	<200	C10	2-nitroaniline	<200
C5	aniline	<200	C11	3-nitroaniline	<200
C6	benzyl alcohol	<200	C12	4-nitroaniline	<200

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO.: 17285-9  
CLIENT I.D.: #17

PP#	<u>ACID COMPOUNDS</u>	ug/L	PP#	<u>BASE/NEUTRAL COMPOUNDS</u>	ug/L
21A	2,4,6-trichlorophenol	<10	40B	4-chlorophenyl phenyl ether	<10
22A	p-chloro-m-cresol	<10	41B	4-bromophenyl phenyl ether	<10
24A	2-chlorophenol	<10	42B	bis(2-chloroisopropyl)ether	<20
31A	2,4-dichlorophenol	<10	43B	bis(2-chloroethoxy)methane	<20
34A	2,4-dimethylphenol	<10	52B	hexachlorobutadiene	<10
57A	2-nitrophenol	<20	53B	hexachlorocyclopentadiene	<10
58A	4-nitrophenol	<50	54B	isophorone	<10
59A	2,4-dinitrophenol	<50	55B	naphthalene	7.5
60A	4,6-dinitro-o-cresol	<20	56B	nitrobenzene	<10
64A	pentachlorophenol	<10	62B	N-nitrosodiphenylamine	<10
65A	phenol	<10	63B	N-nitrosodi-n-propylamine	<10
<u>BASE/NEUTRAL COMPOUNDS</u>					
1B	acenaphthene	<10	66B	bis(2-ethylhexyl)phthalate	<10
5B	benzidine	<40	67B	butyl benzyl phthalate	<10
8B	1,2,4-trichlorobenzene	29	68B	di-n-butyl phthalate	<10
9B	hexachlorobenzene	<10	69B	di-n-octyl phthalate	<10
12B	hexachloroethane	<10	70B	diethyl phthalate	<10
18B	bis(2-chloroethyl)ether	<10	71B	dimethyl phthalate	<10
20B	chloronaphthalene	<10	72B	benzo(a)anthracene	<10
25B	1,2-dichlorobenzene	150	73B	benzo(a)pyrene	<20
26B	1,3-dichlorobenzene	90	74B	3,4-benzofluoranthene	<20
27B	1,4-dichlorobenzene	35	75B	benzo(k)fluoranthene	<20
28B	3'-dichlorobenzene	<20	76B	chrysene	<20
35B	2,4-dinitrotoluene	<20	77B	acenaphthylene	<10
36B	2,6-dinitrotoluene	<20	78B	anthracene	<10
37B	1,2-diphenylhydrazine (as azobenzene)	<20	79B	benzo(ghi)perylene	<20
39B	fluoranthene	<10	80B	fluorene	<10
			81B	phenanthrene	<10
			82B	dibenzo(a,h)anthracene	<20
			83B	indeno(1,2,3-cd)pyrene	<20
			84B	pyrene	<10

## NON-PRIORITY POLLUTANT HAZARDOUS SUBSTANCES LIST COMPOUNDS

C1	benzoic acid	<100	C7	4-chloroaniline	<50
C2	2-methylphenol	<5	C8	dibenzofuran	<10
C3	4-methylphenol	<5	C9	2-methylnaphthalene	<20
C4	2,4,5-trichlorophenol	<100	C10	2-nitroaniline	<100
C5	aniline	<5	C11	3-nitroaniline	<100
C6	benzyl alcohol	7.1	C12	4-nitroaniline	<100

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# Measurement Sciences Corporation

## PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17285-10  
CLIENT ID: Field Blank

PP#	VOLATILES	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbondisulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

This report is for the sole and exclusive use of the client to whom it is addressed.  
Samples not destroyed in testing are retained a maximum of thirty (30) days unless otherwise requested.

Measurement Sciences Corporation

PRIORITY POLLUTANT DATA SUMMARY SHEET

CLIENT:

LAB NO: 17284-16  
CLIENT ID: Field Blank

PP#	<u>VOLATILES</u>	ug/L
2V	acrolein	<100
3V	acrylonitrile	<100
4V	benzene	<5
6V	carbon tetrachloride	<5
7V	chlorobenzene	<5
10V	1,2-dichloroethane	<5
11V	1,1,1-trichloroethane	<5
13V	1,1,1-dichloroethane	<5
14V	1,1,2-trichloroethane	<5
15V	1,1,2,2-tetrachloroethane	<10
16V	chloroethane	<10
19V	2-chloroethylvinyl ether	<10
23V	chloroform	<5
29V	1,1-dichloroethylene	<5
30V	1,2-trans-dichloroethylene	<5
32V	1,2-dichloropropane	<10
33V	1,3-dichloropropylene	<5
38V	ethylbenzene	<5
44V	methylene chloride	<5
45V	methyl chloride	<10
46V	methyl bromide	<10
47V	bromoform	<10
48V	dichlorobromomethane	<5
49V	trichlorofluoromethane	<10
50V	dichlorodifluoromethane	<10
51V	chlorodibromomethane	<5
85V	tetrachloroethylene	<5
86V	toluene	<5
87V	trichloroethylene	<5
88V	vinyl chloride	<10
C13	acetone	<5
C14	2-butanone	<5
C15	carbonyl sulfide	<5
C16	2-hexanone	<5
C17	4-methyl-2-pentanone	<5
C18	styrene	<5
C19	vinyl acetate	<5
C20	total xylenes	<5

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